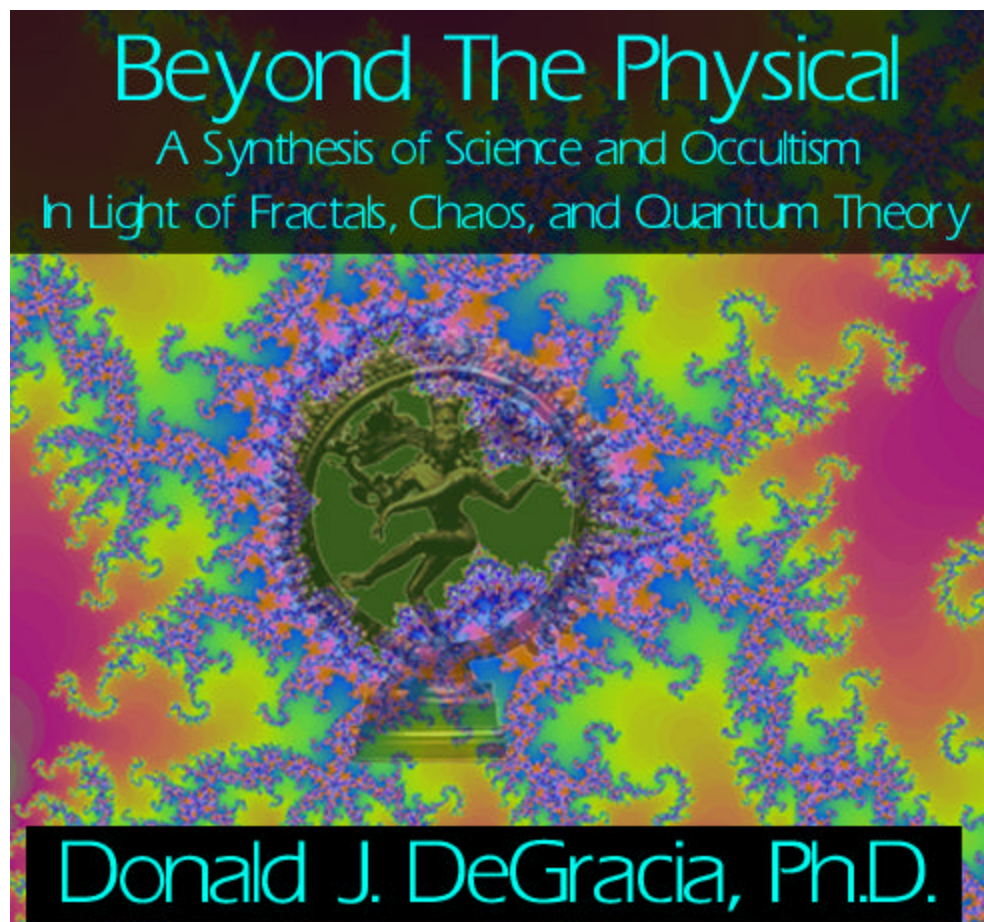


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BEYOND THE PHYSICAL

**A Synthesis of Science and Occultism
In Light of Fractals, Chaos and Quantum Theory**

by Donald J. DeGracia, Ph.D.

About 170,000 words

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Dedication

*This work is dedicated to
all my cosmic buddies without
whom all that is said here
would not have come about:*

*J.C.
Steve
Earl
Todd
Mouse
Joe
Gregor*

*and of course,
my musical inspiration:
Yes (circa 1973)*

"We must beware of falling into the fatally common error of supposing that what we see is all there is to see."

Charles Webster Leadbeater,
The Astral Plane, 1895

"The isolated knowledge obtained by a group of specialists in a narrow field has in itself no value whatsoever, but only in its synthesis with all the rest of knowledge and only inasmuch as it really contributes in this synthesis something toward answering the demand; who are we?"

Erwin Schrödinger,
Science and Humanism, 1952

Preface by Robert Butts

I'm more than happy to recommend *Beyond The Physical*, by Don DeGracia. I think his fine book *is full of penetrating insights* into those great yet personal questions about reality that we all have. Don covers a wide variety of subjects *and* emotions as he probes into our attempts to understand the illimitable mysteries of this marvelous universe that, I believe, we're all creating together, individually and jointly. His material ranges from a history of the occult to the latest in scientific discovery. In his own words, Don shows that "science and occultism are highly related in both methodology and content." Yet there are no dry, pedantic platitudes here. *Beyond the Physical is an exceptionally lively and well-thought-out book for the layman and the scientist.* Indeed, it reveals our insatiable curiosity as we wrestle endlessly with those profound questions of our existence: It's about our morality, our psychic nature and power, our science and art and literature and psychology. It's about much more too - But I can't do *Beyond the Physical* justice here, really. I can only note that *Don guides us in most illuminating ways along highly creative paths of interior and exterior discovery. This book is an excellent inquiry.*

Robert F. Butts
Elmira, NY
1991

Introduction

This is a work that is concerned with building bridges, with building intellectual bridges. I will address many topics throughout this book, and these will be topics that are not usually discussed side by side. In my discussions of the many branches of science, occultism, philosophy and mysticism, I have not made any attempt to be overly technical and erudite. That is, this is not a technically exhaustive work. Overall, this book is meant to be a broad overview of a very complex set of topics. I have purposely taken a simpler approach in this presentation so as to keep this book accessible to a wider audience. For the reader interested in obtaining greater detail, I have provided a bibliography with references ranging from popular accounts of topics to current and highly technical scientific journal articles of pertinent subjects, as well as original occult sources.

The chapters of this book will be broadly grouped under three main sections. The first section will be a survey section in which we will review science and occultism. Here we will discuss the structure of modern science, and as well go into occult ideas and authors whose work will lay the foundation for subsequent claims. Section two will attempt to clarify the meaning and relevance of occult notions within the scope of our everyday lives, and as well will offer my particular perspective on the nature of a synthesis of scientific and occult world-views. Section three will serve to create a greater philosophical framework in which to understand the claims put forth in the first two sections.

This book has essentially two themes. First, that a scientific interpretation of occultism shows overwhelmingly that modern science and occultism are compatible forms of knowledge and can be synthesized into a hybrid "scientific occultism" that is superior to either branch of knowledge alone. The second theme of this book, presented in section three, is essentially a philosophical and moral approach to the nature of knowledge, and that is that our experience subsumes our knowledge of our experience, and not the reverse. Or basically, that no system of thought is capable of capturing the totality of the nature of our experience as human beings.

I try in this work to avoid the pitfalls of having to work within institutionalized concepts and definitions. What I mean by this is that I will not subject myself in this book to the limitations inherent in the highly specialized nature of modern learning. Though modern ideas shall play important roles in many points I will raise, overall such a framework is too limiting to express the type of insights I wish to convey. Granted, the specialization of the intellect is in some respects necessary, but in other respects it is highly arbitrary. Human knowledge and experience are in reality highly interrelated and interdependent, and in this regard, intellectual specialization is only a detriment. There are many levels of realization I wish to address throughout this book and the distinctions and classifications of the contemporary intellect serve at times only to cloud and obscure otherwise relatively simple ideas. But I must emphasize that much contemporary thought will play a critical role in the following discussions.

I wish in this book to convey to the reader an attitude, an attitude that cannot be described in the abstract but one which is dependent upon certain sets of facts, assumptions, contentions, observations. I wish to *illustrate* an attitude that can only surface through a mosaic of insights which conceptualize our experiences in particular fashions.

What this means is that much of what I will say will probably seem at times very abstract and unrelated to practical life. Yet I hope to illustrate to the reader that my approach is eminently practical in terms of our everyday lives, in fact that my whole approach is grounded in a pragmatic and operational orientation, one that is free of hypothetical conjectures and speculations and focuses only on that which is eminently "real" in the broadest possible sense of this word.

For I shall throughout this work challenge the reader with the claim that the most real things in our lives and experience are our attitudes and perceptions, the contexts and frameworks of our subjective experience within which we conceptualize the events we call life.

D. J. D. 1993

SECTION ONE: Background Information

This section will provide the necessary background information for the claims of this book. Here we will get a feel for the state of modern knowledge from a scientific and philosophical perspective. We will as well survey the nature of occultism, and focus especially on the modernization of occultism. We will end this section with a brief survey of authors who are already involved in a scientific interpretation of occultism.

Chapter 1. Preliminary Remarks About History

It's very hard not to feel that there really is no such thing as history. When you stop and consider all of the available lines of thought open to us today, it is almost as if there is no time--or that all of the times, all of the periods in history--mix and intermingle right here and now within our consciousness. It seems to me that our particular "now" is a temporal nexus in which all of the "nows" bleed imperceptibly into one another and that all of the possible things that could exist actually do exist here within the grasp of our understanding. Yet, then again, I realize, with more than a hint of irony, that the only reason I can sit and think such a thing is *because of* our history, and particularly because of the history of our Western Civilization in the Twentieth Century.

Probably the main theme one can identify looking back over the past hundred or so years here in the West is a continued expansion of our thoughts and perceptions. No sooner is a new plateau of understanding reached and, at that point, it is already obsolete; "old news". The dialectic expansion of thesis-antithesis-synthesis is constantly compounding upon itself in a dizzyingly magnificent trash heap of accumulated knowledge that seems to be the characteristic of our age. On all the levels of cultural activity this has been the one over-riding theme; the exploration of possibilities. Our mass consciousness has flown like a great river into every conceivable nook and cranny that our reality and experience will provide. When you sit and look at all the accomplishments in art, science, philosophy and mathematics, music, poetry and drama, politics and economics, production and consumption, technology, education and all the other endeavors with which we whittle away the time, it really makes one wonder if there's anything left to do. Is there really anything new under the sun? But you, like I, feel that gnawing urge that drives us on, that culturally imbued knowing that, yes indeed, there is more to come. Indeed, the best is yet to come. For after all, this is Infinity and there is room for everything.

If all of this sounds overly dramatic, then forgive my tendencies in such a direction. I just can't help feeling a sense of awe when I look back at the colossal changes and developments that have occurred in only the last century of our species' history. I strongly believe in the dictum; "You don't know a thing unless you know its history". Having a historical view gives us the advantage of appreciating a thing's roots, and gives us the insight that things always seem to fall right in the place they belong. Also, history teaches us that human affairs go like a pendulum, first to one side and then the other. And knowing this we can get a sense of what the future just may hold, and such a sense of anticipation further stirs us on to realizing the future today, in our own lives. On the other hand, if we neglect a thing's history, then it's easier to be intimidated by the thing, to not understand its natural context. In this case the thing becomes decontextualized and some of its essence is lost. The result is that we then put the thing in a new context, and quite inadvertently contribute to the accumulation that we call history.

I make these statements on the basis of my formal education in science where my peers and I were taught, and are taught, the wondrous ideas of the likes of Newton and Einstein,

Schrödinger and Heisenberg. Yet these ideas are taught to us in a historical vacuum. No one ever explains to us why these men created these ideas, or just what the factors were in their day that led them into these ideas, or why it is that humans even do science in the first place. No, instead we are taught a bunch of very dry mathematics, dry formulas, dry laboratory techniques in the hopes of acquiring a decent job and gaining approval for surviving the rigor of a science education and being successful in a cold and competitive market place. Then again, I should not sound as if I am complaining, because if we all knew these things from the beginning, then where would that renewing vitality that accompanies each generation's rediscovery of the knowledge of previous generations come from?

So my topic now is: the changing nature of contemporary civilization's values and perceptions into new and broader vistas as a result of the continued expansion of the Western mind-set.

Let us start with today. Now--here in the world of today--we live in an era of mass production and consumption, mass communication and mass populations. We are all the products of a civilization whose imagination was sparked by science and a rational approach to our lives and the world around us. We live in a world of machines, machines made in the image of the science that spawned them. And some of us are content, some of us discontented by this reality, and some of us simply don't even think about it. Yet those of us who do think about it spend our time wondering why it is this way, and what we can do about it, and how we should go about making sense of it. Ultimately, these are all of our concerns. And ultimately, I believe that these have been the concerns of all those individuals throughout this century who have contributed to the condition of this world in which we are now asking these same questions.

Today there is a revolution occurring in our thinking. New ways of conceptualization are being explored, old values are being questioned and challenged. Many ideas that were unthinkable even only twenty years ago are beginning to receive serious consideration in modern intellectual circles. In many respects, this situation is a response to the changing needs of our times, a response to challenges that face all of us who are sensitive to the needs of the modern world, those of us sensitive to the need to find new ways of perceiving and understanding a world of ever exploding possibilities. In this quest for new values and new ways of thinking, many are rediscovering old ways of thinking, ancient philosophies from other cultures, and breathing new life and meaning into these ideas, finding in them a relevance to the particular needs and challenges that we perceive to confront us. On every level, this book is itself a contribution to the present revolution occurring in modern thought.

It is well known and broadly discussed that science and the amazing advances which have stemmed from modern science are in large part responsible for the many unprecedented situations in the world today. It is, however, becoming even more commonplace to be of the opinion that it is not so much science itself that is responsible for our contemporary world situation, but how we perceive and utilize science that is the fundamental factor. That is, focus is shifting to an analysis of the underlying assumptions behind the scientific orientation of contemporary civilization. The values and metaphysics underlying our present day sciences are being discussed increasingly, and also being challenged increasingly. Nowhere is this more evident than in contemporary physics with the popularization of the developments and revolutions in modern physics beginning with Relativity and Quantum Mechanics at the turn of

this century and continuing today with the advent of the new theories of Chaos and Fractal Geometry.

In recent times there has been much written about the new metaphysics underlying these advances, and claims put forth that the supposedly new metaphysics behind these scientific advances are not really so new, but are in actuality the old metaphysics of other cultures in a new disguise¹. It is currently quite fashionable to speak of quantum physics in the same breath with ancient metaphysical doctrines of the East, such as Taoism or Buddhism. There is much merit to this approach.

Primarily these new attitudes reflect a new openness and willingness to embrace other doctrines and world-views. This approach is also indicative of a new flexibility to our thought. We are not so insecure anymore that we must defend our conceptions at the expense of alternative ways of perceiving the world. On other levels these movements in contemporary thought reflect a type of cultural diffusion, and in many respects are laying the groundwork for altogether new forms of culture based on a synthesis of both ancient and modern, Eastern and Western approaches. In every respect this is nothing but a positive development in our cultural evolution. It is the purpose of this book to continue this synthesis, this quest to embrace new and old views, to find similarities in ideas that were previously thought to have nothing in common.

One the major turning points in the history of the twentieth century intellect which has lead to the change in attitude discussed above was the publication in 1932 of a mathematical proof in a paper entitled *On Formally Undecidable Propositions of Principia Mathematica and Related Systems* by Kurt Gödel. Gödel's work in this paper marked the death blow to the philosophical position known as positivism, a philosophy that molded the scientific and intellectual thinking throughout the first half of this century, and whose effects still linger today.

It was the contention of the positivists that the world could be known rationally and completely solely within the scope of mathematical and scientific logic. It was Gödel who proved, using the very heart and soul of the positivists doctrine-- mathematics--that it is impossible to ever conceive of such a system of logic. It is not my desire here to go into the details of Gödel's proof because it has been amply documented elsewhere². My point here is that Gödel's proof reflected an important turning point in the nature of the twentieth century intellect, a turning away from broad, monolithic approaches of understanding, toward a new type of pluralistic intellectualism.

A similar trend was also experienced a few years earlier in the physics community with the advent of quantum mechanics. Here, for the first time, physicists were forced to allow a new complementarity into physics, in which mutually exclusive explanations for the same phenomena were admitted to be acceptable under the appropriate circumstances. I am of course referring to the famous "wave/particle" duality presented in 1929 by Niels Bohr and his "Copenhagen" interpretation of quantum mechanics. Again, the twentieth century intellect was forced, by its own standards, into replacing a previously monolithic mind-set with a more pluralistic approach.

Both of these developments were only surprising within the expectation that the world and our experience could be captured within the framework of one unified and complete system of rational thought. Up into the twentieth century this was the underlying and dominating

motivation behind the intellectual endeavors of the West. Alan Watts in *Beyond Theology*³ goes into great detail as to the historical origins of this metaphysics, relating it to the Christian origins of contemporary civilization.

Today it is becoming increasingly understood that the truly valid approach to a rational understanding of ourselves and Nature requires the use of many different perspectives. Gödel's proof spells out the implication that we cannot understand the world solely in terms of mathematics. The principle of complementarity in physics, that is, the wave/particle duality of matter, also tells us that more than one perspective is necessary even to describe the possibilities inherent in physical matter. We are today beginning to appreciate that the phenomena of Nature exist in their own terms at their own unique levels and that the terms used to describe one level of phenomena may or may not apply to phenomena at other levels. Thus we return to the essential theme of this work: that through a plurality of approaches to understanding, we may truly come to appreciate the vast mysteries and complexities of Nature and the human experience.

Notes: Chapter 1

¹The two current books that espouse the relation between quantum theory and mysticism most clearly are: Capra, (1976), and Zukav, (1979).

²For discussions of Gödel's Theorem in various contexts see: Hofstadter, (1979) for discussions of this theorem in the context of self-referential; Kline, (1980) in the context of the history of mathematics; Guillen, (1983) in the context of modern mathematical theory; Rucker (1982), in the context of mathematical theories of infinity. Or, Kurt Gödel's actual paper is reprinted in Davis, (1965).

³Watts, (1973).

Chapter 2. The Four Great Classes Of Knowledge

In the context of the plurality of modern approaches toward knowledge, let us begin by considering four traditional approaches or perspectives toward knowledge: science, philosophy, occultism and mysticism. My purpose in this chapter is to broadly lay out and delineate the relationship between these four approaches to knowledge. In doing so, we shall as well lay out our conceptual basis for the chapters to follow.

First off, there is, and has always been, a constant exchange and interplay among the four in terms of their greater social context. In some cultures, for example ancient Greece or India, or Medieval Europe, the studies of philosophy, science, occultism and mysticism were so intimately intertwined that no real distinction was made between them¹. Granted, these cultures may have seen the four branches of knowledge in a different light than we do today. Yet they saw knowledge in a unified framework in which all four of these approaches had equal validity. However, the way that science and philosophy are taught today in the universities, it is all too apparent that this is not true. Also, the way that religion has been disenfranchised from secular learning in contemporary culture makes it hard to realize that these four approaches to knowledge can, and have, worked together. It is only by a careful survey of the existent mystical and occult literatures that one comes to realize many of the ancient concepts did not necessarily possess the same meaning that we ascribe to them today in the typical university philosophy class.

Consider the following examples to illustrate this point. I was taught in an introductory class to the philosophy of science that the Greek notion of the elements (the ancient concept of the five elements- earth, air, fire, water, and ether) was the classical forerunner of our modern periodic table of the chemical elements. That is, the separation of earth, air, fire, water, and ether was a primitive attempt by the Greeks to classify physical matter. As a matter of fact, the popular college introductory textbook on chemistry by Mortimer² has pictures on the cover of the sky, the ocean, a fire, and rocks- again referring to the Greek elements as a preclassification to modern chemistry. Yet in an occult context, these notions have a completely different meaning. They are symbols that are meant to represent the constitution of a human being as follows: earth is the physical body, water is the emotions, air is the mind, fire is the will, and the ether is the soul. Why the symbols have these meanings is discussed at great length in chapter 11. The point here is that the modern university interpretation is quite incomplete and seen only through the eyes of our own cultural beliefs and definitions.

A second example concerns the field of Chemistry, which believes that it pulled alchemy out of the Middle Ages and turned the pseudo-scientific, half-mystical nonsense of the alchemists into an exact science³. What the chemists don't seem to realize is that chemistry evolved from a bastard version of pseudo-alchemy. Chemistry, in other words, is actually the descendant of a quack alchemy performed by people who didn't understand the true nature of the alchemical symbolism, and literally thought that the goal of alchemy was to convert physical lead into physical gold. Nuclear physicists today even brag that they have accomplished what

the alchemists could not by converting lead to gold in their nuclear reactors. All of this happy patting on the back is wrong. The essence of alchemy was highly *spiritual*. The alchemical symbolism was meant to be symbolic of the spiritual transformations possible in man⁴. No *true* alchemist tried to turn lead into gold, this was simply a metaphor of the spiritual transformation that Buddhist's call "enlightenment", or what Bucke termed "cosmic consciousness", or what I would call the essence of the mystical approach to knowledge; the attainment of mystical insight (see below).

Both of these examples illustrate how little people know, in general, of the actual history of Western thought or what other culture's ideas meant in the context of that culture. Such a general antipathy towards other cultures really taxes views such as presented by Alan Watts that ours is a culture obsessed by history. If that is true, then I don't know whose history obsesses us. But back to the point; these examples illustrate that today, the historical relationship between science, philosophy, occultism and mysticism is one of separation and autonomy, if not hostility. These examples also illustrate how we bias ancient concepts and interpret them only in a fashion meaningful to us, within the context of our culture's implicit assumptions about the nature of reality.

Actually, to the true mystic, nothing is separate from anything else, and any classifications of the nature of reality are seen as that--classifications. Reality itself, from the mystical vantage point, could care less what you call it: "IT" is anything you wish to call "IT"--and everything else as well. Mysticism is the true spiritual approach, it is the true way to religion. What we call religion today in the West is but a watered-down, overly rigid, dogmatic and institutionalized vestige of ancient expressions of the mystical experience. The true mystical experience defies the mind at all of its levels, whether these be words or rituals, dogmas or beliefs, and brings into direct comprehension the overwhelming and unquestionable, yet ever-changing and ever dynamic, living unity of all existence.

But today, in general, science, philosophy and occultism all mock the mystical experience as either some type of neurotic emotionalism or as an interesting anthropological phenomena. On the other hand, those not antithetical to the mystical experience take the paradoxical action of trying to express the experience in terms of words (examples here would be both J. Krishnamurti and Alan Watts). This is inevitable to those who have undergone the experience, but any such verbal and intellectual description of the mystical experience will only confound those who have not had this paradoxical, but very natural, experience.

Contemporary occultism is so fragmented into a variety of schools and dogmas that it is hard to generalize about common attitudes in actual fields of occult practice. Some embrace modern science and philosophy in a similar fashion to the ancient Greeks, such as Theosophy, where there is always dialogue about how the latest scientific developments fit into the Theosophical world-view. Other occult groups are as hostile to modern science as science is hostile to them, such as the current Neopagan Movement⁵. In general, as we shall see throughout this book, occultism has a completely different moral orientation towards life than does modern learning in science and philosophy. At least in theory this is true, although often, unfortunately, occultists have a hard time living up to what they preach.

On the other side of the spectrum, science and philosophy, as taught in the universities today, make a mockery of occultism and mysticism. This is clearly illustrated in the above

examples. Yet the mocking presumptuousness of modern science and philosophy towards occultism and mysticism is only an admission of their ignorance and insecurity in the light of knowledge and wisdom that neither possesses. Still, without such a naive and juvenile attitude towards mystical and occult knowledge it is unlikely that science would have gone as far as it has, and been as successful as it has been, at unraveling the mysteries of physical matter.

I don't think the same can be said for modern philosophy however. I really don't know what modern philosophy has accomplished. Modern philosophy seems to me to be like a wild-man running around in circles and making a whole bunch of noise but not really saying anything in particular. There is a quote by J. J. van der Leeuw that is appropriate in this regard:

"Especially in philosophy we have suffered for many years from a deluge of words, barren of action, and consequently the man on the street has come to look upon philosophy as a pretentious speculation leading nowhere, an intellectual game, subtle and clever, sometimes not even that, but always without practical value for the life of everyday. Often it has been such; disguising its lack of reality under the cloak of a difficult and technical terminology it frightened away the investigating layman and made him feel that it was his fault, his shortcoming which prevented him from understanding its profound mysteries. Only the bold and persecuting investigator discovers that its cloak hides but a pitiful emptiness...The profoundest minds have ever spoken the simplest language."⁶

The underlying idea here is that modern philosophy has had the most to lose by divorcing itself from the ancient wisdom and, in particular, the spiritual aspects of ancient philosophies. In this regard, note in this quote the line: "...without practical value for the life of everyday." What is the use of sitting around philosophizing if it does not do Humanity some good? Most modern philosophy is little more than a rationalization of common attitudes, the seeking of justification for implicit cultural norms that we know deep in our subconscious are not healthy or right. I will return to this line of thinking in section 3.

Within the scope of modern academic philosophy, when we look at such trends as positivism and existentialism, we see how barren philosophy has become. Positivism is the philosophical position which claims that all things can ultimately be understood in terms of science and mathematics. To a positivist there is no need for spirituality or religion, mythology, occultism, or mysticism because all of these things are made obsolete by the sure and precise knowledge of science and mathematics. Existentialism is the philosophical position that man's life is his own and is essentially absurd. To an existentialist there is no God, and even if there is it doesn't matter because ultimately man himself is responsible for his choices.

To be fair, there is merit in each of these perspectives, as they are both intellectual reactions to the explosive changes that have characterized the history of the twentieth century. Positivism has grown out of an over-optimism of the accomplishments of twentieth century science. Existentialism is essentially the opposite reaction; it is the dread and disgust, and obvious absurdity, of two World Wars and the nuclear bombs of science.

It is only when we take these views too far that they become a problem. Yet that is the stock and trade of the modern philosopher--to come up with a viewpoint and swear that it is the truth and all other views are obsolete. Whether it's ever stated or not, this seems to be an underlying assumption in the way modern philosophy projects itself: that ultimately through all of its dizzying word games, somehow or another, philosophy is going to find the ultimate meaning of things. This is how the modern philosopher justifies his existence and livelihood, along with the need to keep alive all of the philosophical baggage from days gone by. To be sure, not all philosophers and philosophy teachers are like this, but in general, this is how modern academic philosophy projects itself. I spoke in chapter 1 about the need of the early 20th century intellect to find the one complete and rational system of thought, and even though other branches of modern learning have abandoned this attempt, it still seems to be the subconscious motivation of modern philosophy.

At any rate, to a university philosopher no two philosophies could be more different. I was actually taught that positivism and existentialism are opposites in that they posit mutually exclusive world-views. Yet I've read enough of each to realize that these two philosophies are different expressions of the same general approach to life, and it is an approach that is, to use LaDage's term, "metaphysically ignorant"⁷. Aside from the fact that both of these philosophies grew primarily out of a cultural counter reaction to the effects of modern science, they are both sweeping philosophies devoid of any spiritual content, completely ignorant of the great spiritual truths of mankind. In comparison, even Christianity looks good, for at least Christians admit to our spiritual reality. But these two philosophies have had their impact during this century, especially in science. I would think that if it were not for the positivist and existentialist movements and their general effect on our cultural development since World War II, our modern science might more resemble occult knowledge and be more embracing of spiritual realities. But the spiritual emptiness of twentieth century philosophy has indeed bled into science, like a child who is a bad influence on other children, and led our twentieth century sciences into the dead-end alley of metaphysical ignorance.

This is really an ironic situation when you consider the attitudes of the founders of science, right up from Kepler and Newton down to Einstein and Schrödinger. For all of these men were motivated by great spiritual truths in their quests to understand the physical world, and this spiritual inspiration obviously speaks through in the ongoing greatness of these men's ideas. These great founders of science, in their own eyes, and in spite of attitudes projected into these men's ideas in the modern universities, were intimately involved in a spiritual quest⁸.

In general today, one sees much of positivism and existentialism in scientific philosophy. One clear example of this is Prigogine and Stenger's book *Order Out Of Chaos*⁹. As a scientist, Prigogine's work in the thermodynamics of irreversible systems is outstanding, as is evidenced by the fact that he received a Nobel Prize in 1977 for this work. Yet as a work of philosophy, this book leaves much to be desired. *Order Out Of Chaos* is primarily a historical/philosophical analysis of the trends in science leading to the advent of chaos theories and the sciences of complexity. Yet, Prigogine and Stenger's analysis of the metaphysics and history leading up to present day science is as empty and devoid of spiritual insight as positivism ever was. These authors project the history of science as if the concept of "God" never existed, or that it was but a mere child-like notion to be superseded by supposedly more sophisticated sci-

entific concepts. Other examples of this variety of positivism in popular science literature can be found as well, notably the somewhat condescending secularism of thinkers such as Carl Sagan or Stephen Hawking, who, resting all faith in modern scientific knowledge, are also quick to belittle religious and metaphysical traditions.

The fundamental problem with modern science's metaphysical ignorance is that, since science has permeated our culture to such a vast degree, then to that degree also our culture itself is ignorant of spiritual realities. Thus, knowledge and technology throughout this century have grown and been applied in a spiritual cultural vacuum. And this has lead us to the vast problems we now face as a species with regard to pollution, the waste of our natural resources, the possibility of atomic warfare, over population, and so on. Again, we will return to this train of thought in the final section of this book and look very closely at the effects of science's metaphysical ignorance and see how this is related to present social problems, as well as our perceptions of ourselves and Nature.

But as the pendulum of history swings back to the other side, there has been in recent years an attempt to alleviate this spiritual vacuum created in our culture by a metaphysically ignorant science. This movement I will call the "science/mysticism" debate and is typified by books such as Capra's *The Tao of Physics* or Zulav's *The Dancing Wuli Masters*, and in the works of Ken Wilber¹⁰, Lawrence LeShan¹¹ and others. The general orientation of the science/mysticism debate is that the underlying metaphysics of quantum mechanics is similar, if not identical, to the underlying metaphysics of ancient Eastern philosophy.

As was explained in the previous chapter, this trend is extremely positive in that it reflects a new openness in Western thinking. But in historical terms, like I mentioned in the last chapter, when we look at the trends of history, they move like a pendulum, and that is the real historical roots of the present science/mysticism debate. We must realize that this movement is also a counter cultural reaction, it is a counter reaction against positivism and existentialism. In greater social terms, the science/mysticism debate is a counter cultural reaction against the general metaphysical ignorance of our culture. The fundamental cultural theme that underlies this movement is the need to reintroduce a sense of spirituality back into modern academic learning.

However, the general theme to this debate is not all that new, and a very insightful and relevant discussion in this regard was originally presented in 1928 by J.J. van der Leeuw in his book *In Conquest Of Illusion*. The points van der Leeuw make pertain immeasurably to the issues discussed in this "science/mysticism" debate, as well as to a potential synthesis of science and the occult, and the relevance of such a synthesis to greater philosophical and mystical issues.

Van der Leeuw, as a representative of mystical and occult lines of thought, has never been a part of academic learning. Thus, van der Leeuw's ideas are more than simply a counter-response to positivism and existentialism. His ideas reflect the occult point of view in which all knowledge is seen as playing an essential role in human culture. Thus, he discusses the relative positions of science, occultism, philosophy and mysticism in the overall scheme of human knowledge. Again, he does so from an occult perspective, which, as we shall see as we proceed, is axiomatically grounded in the understanding of Humankind's spirituality.

His discussion begins as follows: In terms of the knowledge each produce, science and philosophy stand in a mutually illuminating, albeit mutually exclusive position to one another. According to van der Leeuw:

"Philosophy deals with the ultimate principles and realities which are the eternal foundation of our world, science deals with the multitude of phenomena in which these principles appear to us; philosophy deals with the why, science with the how; philosophy searches for the ultimate nature of being, science is concerned with the functions and workings of this world of forms surrounding us...Thus the two, dealing respectively with phenomena or appearances without (science) and with the realities or final principles within (philosophy), are supplementary and equally necessary to a full understanding of the world." ¹²

He then proceeds to carry this distinction into the domains of occultism and mysticism:

"It is interesting to see how the essential difference and mutually supplementary character of philosophy and science are evident also in their respective extensions into mysticism and occultism...The claim of occultism is that this physical world is not the only world which can be investigated scientifically: it teaches that there are worlds of subtler matter which can be explored scientifically by those who have developed the faculties of perception in those worlds... clairvoyance...clairaudience and other similar faculties...(Yet) Occultism, as little as science, has an answer to give to ultimate questions; it may show us the workings of things--the how--somewhat further than ordinary science can... but essentially it is not the task of either science or occultism to answer final questions..."

"...as we find occultism presented as an extension of science so do we find a philosophical mysticism presented as an extension of philosophy. The fundamental doctrine, that of the unity of all life, belongs to the domain of philosophical mysticism; no clairvoyant investigation at whatsoever level can ever observe the unity of life...Intellectual philosophy may come to the conclusion that there is a world of reality of which our everyday world is but the image (or shadow); philosophical mysticism goes one step further and claims that it is possible for man to enter that world...and experience living truth...In this way philosophical mysticism is as legitimate an extension of ordinary philosophy as occultism is of ordinary science."¹³

I think it is apparent that van der Leeuw's distinction is very useful in terms of the current science/mysticism debate. The most relevant point is that this debate is grounded in a confusion of the respective domains of scientific and mystical knowledge. That is, one is expecting too much from science when one supposes that science is capable of addressing issues rightfully belonging to philosophy and mysticism. Erwin Schrödinger also believed and said this¹⁴. Van der Leeuw's ideas dispel this confusion and provide a highly workable basis to discuss issues

pertaining to the science/mysticism debate. As a matter of fact, the above quote provides explicitly the basic assumption of this book: occultism is an extension of science, and neither science nor occultism are relevant in terms of the ultimate principles sought for in philosophy, or directly experienced by the mystic. However, the relationship among these four approaches is not black and white, and we shall see many points of contact and much overlap as we proceed. Again, I will not subject myself to the arbitrary limits of intellectual specialization in this book.

However, I believe that it is fundamentally important that these issues, that is, the relationships between science, philosophy, occultism and mysticism, be put in their proper perspective if this counter revolution in science towards a more spiritual orientation is to be successful. In this case, success means having a fundamental and sustained impact on the metaphysics behind modern science and the social perceptions of science, and thus, on our actual definitions of what science is, and how it is related to our lives.

With this in mind, let us take the work of Ken Wilber, a prominent author within the present science/mysticism debate, and analyze his thinking with respect to the ideas in van der Leeuw's quote. Wilber's viewpoint is very similar to the one I am presenting here, with his position being that the mystical experience transcends the boundaries of science¹⁵. On this basis, Wilber presents his "spectrum of consciousness" approach to psychology¹⁶ to account for the apparently many different levels of human subjective experience, ranging from the physical ego consciousness up through the mystical levels of awareness. His notion of a "spectrum of consciousness" is somewhat reminiscent of the view of the "planes of Nature" as taught in occult literature (what these planes of Nature are will become clear as we proceed for we shall discuss them in great detail). In his "spectrum psychology" Wilber defines four broad levels of this spectrum which include: 1. the Ego level, 2. the Biosocial level, 3. the Existential level, and 4. the Transpersonal level. Without going into the specific details of each of these four broad levels, according to Wilber, each of these levels reflects progressively broader aspects of human consciousness. As we shall see, such an approach is used in occultism as well, in that each of the progressively "higher" nonphysical planes is intimately related to progressively broader aspects of human subjectivity. However, Wilber's discussions along these lines are grounded in purely physical conceptions of human existence and subjectivity, and completely ignore occult concepts which describe our subjectivity as nonphysical. We will see that occultism defines the spectrum of human consciousness, as embodied in the concepts of the planes of Nature, in primarily nonphysical terms. This concept of "nonphysical" has an incredible bearing, not only on the nature of any theory of psychology and human subjectivity that we may posit, but also on how we see the relation between physical and nonphysical, or more generally, objective and subjective phenomena. In other words, as we shall see, occultism has much to say about the relationship between physics and psychology.

In general, the main weakness of the present science/mysticism debate is that it completely ignores occult thinking and concepts. Wilber's concepts, as representative of lines of thought in the science/mysticism debate, do not make a clear distinction between mysticism and occultism, and so do not present the picture as clearly as van der Leeuw has done in the above quote. As far as I have found in Wilber's works, and in other works that have originated in the science/mysticism debate, these authors do not seem to realize the operational reality and methods of manipulation and perception (clairvoyance, out of body travel, etc.) in the

nonphysical planes and the implications these have for modern science. These very topics are indeed the exact subject matter of occultism, and they have an incredible bearing not only on how we view science, but also how we personally view ourselves and the myriad levels of our actual experience.

The point I am getting at here is that the current science/mysticism debate is right on the verge of realizing that: *It is not science and mysticism that are intimately related but science and occultism.*

Van der Leeuw makes this very clear by defining occultism as an extension of science into "subtler" realms, and puts philosophy and mysticism in their rightful place as well. We will spend many of the following discussions elucidating the connections between science and occultism, as it is one of the two fundamental themes of this book that modern science and occultism are intimately interrelated, or, as van der Leeuw says, occultism is an extension of science.

Thus the bottom line to this entire discussion is that, in spite of the seemingly disparate character of the four approaches to knowledge embodied in science, philosophy, mysticism and occultism, they are all in reality highly related. Present trends in thinking have been moving in a direction that is making these relations clearer and clearer. Tying modern science to the mystical approach, as the science/mysticism debate has done, was the first step. This step has been necessary to show that science can indeed be "spiritual". The next step in clarifying the relationship between these four great classes of knowledge comes in understanding the relevance of occult thinking to modern science, and particularly to theories of human psychology and theories of physics. It is the very purpose of this book to begin this task.

Notes: Chapter 2

¹To get a feel for how other cultures, especially ancient cultures, felt about the relationship of these four approaches to knowledge see Seligmann, (1976).

²See Mortimer, (1983), the cover to the 5th edition.

³This attitude is exemplified in Jaffe (1960).

⁴Accurate descriptions of alchemy can be found in Hall (1972), and Seligmann, (1976).

⁵Starhawk, (1982).

⁶van der Leeuw, (1968), page 1.

⁷LaDage, (1978).

⁸In Wilber, (1984), the author has done a great service to all those interested in the actual religious and metaphysical opinions of the scientists who have created modern science by collecting in one anthology essays written by these scientists about these matters.

⁹Prigogine and Stengers, (1984).

¹⁰Wilber, (1982) and Wilber, (1984).

¹¹LeShan (1974).

¹²van der Leeuw, (1968), page 59.

¹³Ibid., pages 63-64. Regarding van der Leeuw's discussion of the relationship between science, occultism, philosophy and mysticism, I would like to point out that this quote I have provided highlights only the essentials of his argument. On pages 58-67, van der Leeuw provides a quite detailed and insightful discussion to which the interested reader is referred. Here I have only attempted to capture the essential argument presented by van der Leeuw.

¹⁴Wilber (1984), pages 77-84.

¹⁵Ibid.

¹⁶Wilber, (1977).

Chapter 3. A Survey Of Contemporary Science

As I stated in the previous chapter, science and occultism are highly related in the sense that van der Leeuw describes. Science is an investigation into physical phenomena and occultism is an investigation into essentially nonphysical phenomena. We will discuss what it means to say that occultism is an investigation into nonphysical phenomena in the upcoming chapters. I have three intentions in this chapter. First, I would like to describe science in such a way as to set the stage for a unification or synthesis of scientific and occult ideas. What this means is that I will focus on concepts and notions from modern science that are particularly relevant in this regard. Yet, even though I am taking such a slant, I will do so within the context of *all* of the disciplines of science that are practiced today. Indeed, it is necessary to have at least some understanding of the relationship between the various disciplines of science in order to appreciate the relevance of occultism to science. My second intention is to convey to the reader the actual spirit and "feel" of what science really is to those who do it for a living; to show that science is a real activity that real people actually do. For I feel that science has become overly mystified in the popular mind, and that the average person sees scientists as somehow larger than life. Though scientists have done some great things, they are normal people like everyone else, and I want the reader to realize this. And third, I would like to describe science in such a way that it is seen in the greater scope (one among many) of activities with which human beings involve themselves. In this third regard, let us begin by looking briefly at the history of science.

What we call science today is an activity and approach to life that has its origins in the Renaissance period of Western European history¹. It was during this time that Western Europe was climbing out of the Middle Ages through the discovery of the writings of the ancient Mediterranean civilizations which had been preserved by the Byzantine culture. The rediscovery of ancient Greek and Roman teachings, the works of Galen and Ptolemy and others, ushered in a new mentality for Western civilization. As well, this was the time of the crumbling of the Medieval feudalism and the early beginnings of secular nation-states and capitalistic economies. The 14th through 16th centuries was a period of great transition for Western civilization as it broke out of the shackled ignorance of the Middle Ages. The rise of modern science was the rise of a new attitude and a new civilization in Europe. The secular humanism which replaced the sacred traditions of the Church was an attitude that rejected the blinding faith required by the Church and replaced it with new and open eyes turned toward the marvels of Nature.

Initially, science did not exist as a separate branch of learning. Those who used science were scholars, physicians or magicians (alchemists and astrologers). In this period science was not distinguished from Natural Philosophy, but was a part of it and was seen as one approach to knowledge among many.

But over time, as physicians and magicians tried to apply the ancient learning, errors and discrepancies were discovered one after another. As a result, many began to branch out on

their own and break away from the teachings of the ancients, usually quite violently, as the ancient teachings were the standards of learning to the respectable society of the day. This was a period of innovation that bred the likes of Paracelsus, Kepler, and Francis Bacon. It was at this period in history that Giordano Bruno was burned at the stake by the Roman Inquisition for his espousal of Copernicus' theories.

This was age of the beginning of the real innovative spirit behind modern science which scoffed at useless traditions and mocked the myths and old wives' tales of the past. The following quote in which Paracelsus is defending his teachings against those who would cling to the old ways conveys the spirit of the period nicely:

"You are not worthy that a dog shall lift his hind leg against you. Your Prince Galen is in hell, and if you knew what he wrote me from there you would make the sign of the cross and prepare to join him."²

The culmination of this period can be seen in the works and discoveries and very life of Galileo Galilei, armed with his crude telescope observing the moons of Jupiter (among other things) and overthrowing old dogmas for good. And as these bold innovators pressed on against the weight of worn out traditions, they left behind them an accumulation of new facts, new practices and techniques in medicine, astrology (which became astronomy), mathematics, navigation, physics and chemistry and every other field of endeavor they touched. And this accumulation began to take on an identity of its own and these things became known as "science".

And here we are today, 350 years after the death of Galileo, the inheritors of this science. A lot of water has gone under the bridge in this time. After the era of Galileo, science took on a definite form. First there was Newton with his mathematics and physics, Laplace the great French mathematician and physicist, Dalton and Lavoisier, the founders of chemistry. Then the nineteenth century saw Maxwell and his laws of electromagnetism, Darwin and his theory of evolution, Mendeléeff and the periodic table of the elements, Mendel and his laws of genetic inheritance. And as history entered the twentieth century even more bold and spectacular developments had taken place: Einstein's Theory of Relativity, The Quantum Mechanics of Planck, and Bohr, Heisenberg and Schrödinger, the discovery of the genetic code. And there is the work of thousands and thousands of others, whose names are not as familiar, who have left for us this heritage of knowledge and techniques that we call science.

Then, with the advent of quantum theory, the proverbial dam broke and the world transformed almost overnight. Today, a mere 60 years later, we live in a world of spaceships and computers, satellites and lasers, genetic engineering and, last but not least, nuclear bombs.

It is very easy to be intimidated by modern science, but the best way to overcome this intimidation is by knowing history, and understanding how science fits into history. For nuclear bombs and lasers did not come into existence overnight or out of the blue. They have their roots in Galileo's struggle with the Church, in Newton's calculus, in Maxwell's equations, in the philosophies of Nietzsche or Wittgenstein, in the lives of real people who lived and walked on the Earth like you and I. The rise of modern science is a courageous and inspiring story. What's important to realize about the people who created science is that they were in some respects driven. They were driven by an urge to understand; to understand truth, to understand

Humanity, to understand Nature and to understand God, at all costs and no matter what their contemporaries believed. These were people with curiosity and animated minds, people who were obviously dissatisfied with the explanations of their day and so strove through creative work and effort to discover new explanations and new ways. And because they were driven, they left for mankind a trail of accumulation; more techniques, more explanations, more science.

It was only after World War II that science really became the enterprise it is today. That scientists could produce an atom bomb made the world stop and take notice. Governments and politicians became involved in the scientific enterprise to a much greater degree than they ever had before. And science, during the last fifty years or so, has become a multi-billion dollar enterprise, and the preoccupation of affluent nations. More scientists have lived since W.W.II than in all the past taken together.

Modern science is the way of life in the late Twentieth Century. Modern science, I think we can say in all fairness, is the official State Religion of contemporary civilization. No longer is science the activity of rebellious intellectual upstarts. Today it is the accepted way and practice, it is our tradition--a tradition that Max Weber called "rationalization"³. Science has definitively and finally ousted religion and replaced it as the ultimate dispensary of truth. And today we treat the proclamations of scientists as past ages treated the proclamations of priests.

I think it is important to realize the social reality of science today. Much of the popular image of the scientist as the lone seeker of truth is today but a myth of an image that died over 100 years ago. Today science is a very sober and rational enterprise, and it is a huge enterprise. Science is no longer an adversary to the legitimate powers. The scientist today is the right hand man to governments and huge multi-national corporations. Today's scientist is Merlin the magician of King Arthur's Court.

There is no facet of our modern life that is unaffected by modern science. The roads we drive on, the cars we drive in, the gasoline our cars use, the toothpaste we use, and the wine and soda pop we drink, our polyester underwear, all the medicine we take, our TVs, stereos and VCRs, the telephone and microwave oven; all of these are the products of modern science. Some like to make the distinction between science and technology, but this is a useless distinction. Technology is the physical product produced from science. Technology exists because we do science in a capitalistic free marketplace.

And as well as the physical products of science, our whole image of who and what we are is grounded in modern science. We see ourselves through science's eyes, through the ideas and notions that make up modern science. Through the eyes of science, we know the Earth is a globe spinning about a vast nuclear fire-ball called the Sun, and that our Sun is but one of billions of similar entities that we see as stars in the night sky. And we know that the human race is but one species among millions here on the face of the Earth, and that great processes of evolution over long ages have created life as we know it today. We think of our bodies as complex arrangements of chemicals, and TV commercials sell us on the cholesterol content of their products. Science has defined for us what and who we are. Science is the myth maker of the modern world.

Since everybody uses technology, and most everybody is exposed at least to some degree to the mythology of science, then, in these respects, everybody uses science as well. But there are certain people who use science more than others; people who use science on the

job, you might say. These people are not only scientists, but engineers, and doctors, teachers and even philosophers and businessmen. These are the people who make their living by doing science today. The man (or woman) on the street has a different image of science than the man (or woman) who does science. In the media, science is displayed in a sensationalist fashion that is nothing at all like the reality of doing science. The popular image of science and the ideas used by scientists in their day-to-day endeavors are two totally different things. The reality of doing science on the job can range from the monotony of testing the quality of a piece of equipment over and over again to the excitement of winning the Nobel Prize.

Most of the excitement in science today is not with the thrill of discovery, but with the prestige of discovery⁴. In the day-to-day activity of science though, there is little discovery, it is mostly application of what is known. So the engineer programs well known equations into his computer, the medical technologist analyzes blood samples, the graduate student sequences yet another gene. When new facts are discovered they are but incremental steps in a direction that is clearly laid out and anticipated. The bulk of modern science has little to do with the penetration of Nature's profound mysteries. There have been recently discoveries in modern science that *are* deep penetrations into Nature's mysteries, and I am referring to the new science of Chaos and the new mathematics called fractal geometry (which will be discussed below). But such steps are rare. Usually it's just more of the same old thing; a new pill, a better engine, a biodegradable plastic bag.

At this point there are some notions I would like to discuss that will make it easier to understand the nature of scientific knowledge and the relationships between the various theories in science. Also, the following discussion will be critical for understanding the relationship between science and occultism.

A philosopher named Thomas Kuhn published a ground breaking book in the 1950s entitled *The Structure Of Scientific Revolutions*⁵. Kuhn's concern as a philosopher was to develop an understanding of how scientific theories change, and how science as a whole evolves. Kuhn put forward the theory that, in any particular branch of science at any given time, there exists a guiding intellectual framework that Kuhn refers to as a "paradigm". A paradigm is a model of how the world works, it is a set of ideas that defines what is and what is not real to the scientist who uses that paradigm. A paradigm is like a road map that the scientist uses to make sense out of Nature. Kuhn actually likens a paradigm to a puzzle, and likens the scientists who use the paradigm to puzzle-solvers. Thus, the popular image of a scientist as a discoverer is wrong in Kuhn's account of science. The only "discoverer" is the person who created the paradigm initially; the rare Newton or Einstein. The creator of the paradigm was the one who recognized and expressed a new way to view the world, a new truth, a new definition of what is and what is not real.

But the new paradigm is very nebulous, there are a lot of holes in it. What happens though is that other scientists will begin to accept the paradigm, incomplete though it may be, and see reality within its light. A prime example of this situation occurred when Charles Darwin expounded his theory of evolution by natural selection. When he originally stated this theory, he had no actual mechanism to account for the process of natural selection. Yet this did not stop scientists from accepting Darwin's theory as a "road-map" to explain biological life as we see it. The fact that this theory could not really explain *how* natural selection occurred was simply

overlooked, and it was trusted that this mechanism would eventually be found. Forty or so years later, Mendel's laws of inheritance were rediscovered, and it was eventually realized and accepted that the "gene" postulated by Mendel was indeed the actual physical basis for evolution by natural selection. Thus, a paradigm is far from complete, or even consistent, at the time of its inception.

The scientists who come to accept a new paradigm are then what Kuhn calls the "puzzle solvers", for they have been given an incomplete picture of the world, and it is up to them to fill in the details. The puzzle solving scientist does not discover anything, he simply fills in the blanks of the paradigm and gives it more detail and makes it richer in particulars. But even though there are more details, the essential definition of what is and what is not real is still the same. This is why I said above that most discoveries in science are but incremental steps in a clearly anticipated direction. Really, in Kuhn's context, these are not discoveries but puzzles that have been successfully solved. And Kuhn, using examples from science's history, shows that paradigm creators are rare and the vast bulk of scientists are actually those who are the puzzle solvers.

Now there is more to Kuhn's theory that pertains to how scientists change from an old to a new paradigm. To say that a paradigm defines what is and what is not real to a scientist is very important. What this means is that the scientist only accepts the facts that the paradigm will allow him to accept. If the scientist encounters a fact that does not fit into the paradigm then the scientist will either ignore it or attempt to bend the paradigm to fit the fact. However, sometimes the paradigm simply cannot bend to fit certain facts. In this case other, usually younger, scientists will come along and create new paradigms to try to explain the anomalous facts. What results then is the competition between paradigms for the right to define reality in the scientists' eyes. This is what Kuhn called a "scientific revolution". The outcome of such a scientific revolution, according to Kuhn, has little to do with "truth" or with an understanding of Nature. Kuhn likens a scientific revolution to Darwin's notion of the "survival of the fittest". That is, what happens during a scientific revolution is literally a competition between different groups of scientists for the right to define reality. And the stronger group wins, perhaps by political means, and in spite of what may or not may be "truth". Often, scientific revolutions are hostile and bitter affairs amongst scientists of competing camps. The new paradigm only comes to prominence when the exponents of the old paradigm die. That is, when all of the scientists who believed in the old paradigm die, and all that is left are the younger scientists who use the new paradigm, then the new paradigm will eventually take over in the eyes of the scientists. Thus, a scientific revolution comes to pass, and "facts" or "truth" have very little to do with the process.

These are the essential notions we need for understanding science and for understanding the relationship between science and occultism. First, in terms of understanding modern science, one needs to realize that each of the fields of science is a paradigm. Thus the understanding of the different disciplines in science amounts to understanding the paradigms that define the disciplines. Second, with respect to discussing occult and scientific ideas and the relationship between them, we must realize: 1. occultism and science are different and competing paradigms, and 2. that to attempt to show a relationship between scientific and occult ideas amounts to no more than a scientific revolution. Claiming that occultism and science are related

is almost a declaration of war on the paradigms that currently make up modern science because none of these paradigms accept occult facts.

3.1 The "Hard" And The "Soft" Sciences

There are a few different notions by which to understand modern science. One was already mentioned; "pure" verses "applied" science. What these terms mean is that "pure" science is science that is done with the intent of "knowledge for knowledge's sake" and "applied" science is science that is done for some definite application. Within this distinction, an example of pure science would be a researcher studying migratory patterns of birds simply because she wants to understand the phenomena. A perfect example of applied research involved scientists figuring out how to separate the isotopes of uranium to build the atom bomb. In this case, they did not separate these isotopes to just know how to do it, they had a particular application in mind. But there are some examples of research that don't fit easily into this distinction, like AIDS research. One would think this would be a case of applied research, but it is not. Much "pure" knowledge is needed, in this case about the immune system and about how the AIDS virus interacts with the immune system. When the distinction of pure verses applied knowledge is closely scrutinized it turns out to be an ambiguous distinction, and thus, one not well suited for characterizing the scientific enterprise.

Another distinction made among scientists is the issue of the "hard" verses the "soft" sciences. In this case the "hard" sciences are those that are grounded in mathematical theories such as physics and chemistry. "Soft" sciences are those that use little mathematics and are primarily descriptive and qualitative, such as psychology or sociology. This is a fairly good distinction to make though the terms are somewhat misleading in their implications. What I mean by this is that, for example, the study of a chemical reaction is *easy* compared to say, the study of human psychology which is *hard*. But this is not what scientists mean. They use the term "hard" to denote that these sciences are on a *firm* mathematical basis, whereas the "soft" sciences are wishy-washy (or soft) in this respect. What does it mean to say that a science is on a firm mathematical basis? This means that the essence of the paradigm the scientist uses is defined by a mathematical theory. In some respects this distinction is a leftover from the hey day of positivism's influence on modern science.

Yet this is a useful distinction because the "hard" sciences, those that are firmly rooted in mathematical theories, are usually more reliable. That is to say, a "hard" scientist understands and can predict his phenomena better than a "soft" scientists can understand and predict her phenomena (I use the pronouns that way to make a joke on the male chauvinist scientists and their terminology). Let me elaborate on this in a clearer fashion.

What we must realize about modern science is that the paradigms that define the "hard" sciences are all interrelated in terms of concepts and definitions, experimental analysis and the like. The paradigms of the hard sciences are very interchangeable amongst each other. The paradigms of the "soft" sciences, on the other hand, are very fragmented and terms and definitions cannot be interchanged. And most importantly, the "soft" sciences exist in a vacuum relative to the hard sciences. Another way to say this is that the "hard" sciences form one big

happy family, but the "soft" sciences do not, and neither do they fit into the family of "hard" sciences. That the "soft" sciences should or should not fit in with the "hard" sciences is a philosophical issue. I believe they should because I believe in the unity of Nature, in spite of the paradoxical need for many languages to describe Nature's unity. And, as we shall see, the relationship between science and occultism has an incredible bearing on the present state of dissociation between the "hard" and "soft" sciences.

Now, examples of the "hard" sciences are the general fields of mathematics, physics, chemistry, and biochemistry. Each of these disciplines has a myriad of specialties but they need not concern us here. Now in the actual education of these scientists, a mathematician does not need to learn physics, chemistry or biochemistry. A physicist needs to know mathematics, but not chemistry or biochemistry. A chemist need to know math and physics but not biochemistry. And a biochemists need to learn the most: math, physics and chemistry. That is, these science are *cumulative*. Generally speaking, especially in terms of actual university curricula, this is true, although each progressively broader discipline gets a less detailed education of the more basic disciplines. Thus chemists or biochemists do not know math as well as physicists and mathematicians, for example. But in actual professional practice, since all of these disciplines speak the same language, and that language is mathematics, you will find physicists doing biochemistry (Francis Crick, the co-discoverer of the structure of DNA was one of these), or biochemists doing math, for example. Mathematicians used to stay mostly in their own academic world. But now, with the advent of computers, mathematicians are coming out of their holes more and participating in physics, chemistry and biochemistry.

We can generally carry this cumulative chain of disciplines into biology and physiology (and their respective sub-specialties), and also into the field of medicine. But in the actual education for these specialties, only the most cursory overview is provided of the more basic sciences such as math, physics and chemistry.

This situation in the "hard" sciences may seem complicated (and it is) but it stands in stark contrast to the situation in the "soft" sciences. Here we have sciences such as psychology, anthropology, and sociology and the myriad sub-disciplines of each of these. Now, unlike the "hard" sciences, the "soft" sciences are not all interrelated. For example, within psychology alone are many competing schools of thought and paradigms; Freudian psychoanalysis, Jungian psychology, behaviorism, Maslow's transpersonal psychology, the newer cognitive psychology, physiological psychology, medical psychiatry, only to name a few. Similar lists could be drawn up for the other "soft" sciences. Whereas a chemist, physicist and biologist all agree to the meaning of terms such as "work", "pressure", "energy" and other common terms they use, it would be a miracle if Freudian, Jungian and behaviorist psychologists could agree on the meaning of terms such as "personality", "cognition", "consciousness" and other terms that a psychologist may use.

In Kuhn's terms, the "hard" sciences are very mature to have come to a state where there is an established consensus of many standard definitions of phenomena; this implies a very stable set of paradigms (in this case, a set of paradigms that pertain to the nature of physical phenomena). The "soft" sciences, on the other hand, are very immature in their development as sciences precisely because they consist of many competing paradigms with no common

consensus or standard definitions of the phenomena they claim to study (that being the study of the many levels of human behavior).

And as I stated, there are as yet no paradigms in the "soft" sciences that are related to the paradigms of the "hard" sciences. "Hard" scientists and "soft" scientists are educated into completely different paradigms; they speak vastly different languages. What this means is that the study of physical matter is unrelated to the study of human behavior in very fundamental ways. There are no stated principles in modern science that tie together the behavior of atoms and humans. Or another way to say this is that *modern science does not provide a unified description of the world*. Again, this is because the sciences that study human behavior are unrelated to the sciences that study physical events. About the only attempt made in this direction is in the newer field of cognitive psychology, in which an eclectic sampling of paradigms from computer science, artificial intelligence and other sources are applied to human behavior. Yet it is unlikely that the cognitive psychology paradigm will produce the type of synthesis of "hard" and "soft" sciences which will allow for the discovery of general principles between Humankind and Nature because the cognitive psychology framework is still too intimately involved with addressing traditionally "soft" scientific concerns. But there is also another avenue in modern science that points to fundamental principles operating both in physical matter and human behavior and this involves the new science of chaos and the new fractal geometry. I will go into this point in more detail below and in other chapters.

For an initial look at all of the disciplines that make up modern science, this distinction of "hard" verses "soft" sciences is useful. However, in actual practice, there is much more overlap than these terms imply. For example, a science known as psychopharmacology--which is the study of the effects of drugs on behavior and the mind--draws heavily on both biochemistry and physiological psychology, as well as medicine. Furthermore, it is very important for the reader to realize that modern science is constantly changing in terms of the paradigms that define it and the relationship between these paradigms. Thus, any generalizations about science as a whole must be taken with a grain of salt.

So keeping this overlap and dynamism of paradigms in mind, the important thing I want the reader to realize with this "hard"/"soft" distinction in science is that the "hard" sciences are grounded in a relatively unified theoretical framework which is, in general, not shared with the "soft" sciences. To anticipate a bit, perhaps it is possible to develop an approach to the "soft" sciences (which in essence are the sciences of human behavior) which is fundamentally grounded in the same paradigms as the "hard" sciences. I will suggest that this can be accomplished by introducing occult notions into science and coupling these notions with the new paradigms provided by theories of chaos and fractal geometry, as well as with the paradigms of quantum mechanics. This contention will serve as the subject of the following chapters.

There is another point I would like to make about the difference between the "hard" and "soft" sciences and this was alluded to above when I said that the "hard" sciences were better at predicting and understanding phenomena than the "soft" sciences. The reason this situation exists rests primarily on the nature of the paradigms each uses. In general, in the "hard" sciences the paradigms used provide a *mechanistic explanation* of the phenomena being studied. Here I am *not* talking about the mechanistic philosophy of Newton's clock-work universe. What I mean here is that the paradigms and models used in the "hard" science provide detailed

mechanisms of cause and effect to explain the phenomena they study. It is because "hard" sciences understand, explain, and describe the mechanisms of the processes they study that these sciences have been so successful at elucidating Nature's secrets.

On the other hand, there are no mechanistic explanations in the "soft" sciences in general. Usually the paradigms of the "soft" sciences amount to little more than philosophical opinions concerning the nature of human behavior (Marxist sociology, for example, or behaviorist psychology), and are usually broad sweeping generalizations. Such generalizations usually do nothing to suggest actual mechanisms in human behavior. Thus this dichotomy also explains in part the relative strength of the "hard" sciences over the "soft" sciences.

However, there are fundamental scientific reasons why there is no substantial overlap between the "hard" and "soft" sciences and this involves the respective content of the "hard" and "soft" sciences.

First there is the issue of complexity. The subjects studied in the "soft" sciences (i.e. the operation of the brain, large-scale social behavior, personality development) are extremely complex systems from the "hard" science point of view. Thus, "hard" science approaches fall apart at these levels of complexity if they are applied literally. An example here would be trying to understand the behavior of the brain in quantum mechanical terms--this is simply impossible. Furthermore, in terms of the analysis of complex systems, the "hard" sciences usually cannot adequately deal with systems that seem to be in their domain. A prime example here is that the behavior of biological systems cannot be adequately described using present theories from chemistry and physics. These theories provide partial windows of understanding into say, the behavior of enzymes or cells, but there are still fundamental behaviors observed in these systems that cannot be adequately explained in "hard" science terms, such as enzyme biogenesis, gene behavior or cell division (and ultimately the development of biological organization).

The second fundamental scientific factor that separates the "hard" from the "soft" science is one of observational methodology. "Hard" scientists operate under a reductionistic methodology in which they isolate a system from its natural environment in the laboratory and then dissect it into its component parts. This is a methodology that, though it is attempted, cannot really be applied to human systems. We cannot put human societies in a laboratory and then manipulate them to see what are the controlling variables. The study of human systems generally requires an observational methodology akin to what biologists, ethologists and ecologists use to study animals in their natural settings. Thus, the "soft" scientist's hands are tied, so to speak, relative to the "hard" scientist in that the "soft" scientists simply cannot manipulate the systems they study to obtain the type of information that "hard" scientists routinely use.

There is a third scientific factor as well which separates the "hard" and "soft" sciences, aside from complexity and observational methodology, and this is the issue of *time*. Time, as we all know in our everyday experience, always goes forward. Physicists call this property of time "irreversibility". Irreversibility is intimately connected with two seemingly contradictory observations in Nature: first, that natural complex systems seem to get more complex over time, as with biological or cultural evolution, second, that some natural systems seem to "run down" over time. This is the idea of "entropy"; ultimately that disorder wins (or entropy becomes a maximum). Thus, biological organisms die, species and cultures go extinct, or the universe dies in a heat death.

The notion of time leads to these two seemingly contradictory notions; systems get more complex over time or systems run down over time. This is a great problem in modern physics for the relationship between these two seemingly contradictory aspects of time is not understood on any fundamental basis. That is, entropy and evolution are not built into the supposedly fundamental theories of modern physics, for example relativity or quantum mechanics. Yet these notions play a vital role in the study of the systems that "soft" scientists use, such as the evolution of cultures or the development of personalities.

Along with chaos, fractals and quantum theory, this issue of time and irreversibility will also be another scientific theme that will thread through this book. What we shall see is that occult views offer some novel approaches to this particular problem that are relevant not only in a "hard" science context, but as well in the context of relating the "hard" and "soft" sciences.

Thus, to summarize, the "hard" sciences and "soft" sciences presently are unrelated because of the following factors: 1. the relative maturity of the paradigms, 2. the use of mechanistic explanations in the "hard" but not the "soft" sciences, 3. the complexity of the systems being studied, 4. observational methodologies, and 5. the role played by time and irreversibility in our theoretical understanding of natural systems.

The issues of complexity and observational methodology resolve themselves into the philosophical issue of the reductionistic mentality of modern science; what are the limits and validity of this mentality? We shall see that occultism offers an alternative methodology, a holistic or ecological methodology to the study of natural systems. Thus, when we begin our scientific interpretation of occultism, we will begin to appreciate how a holistic mentality will allow us to approach the issues described above, for which the present reductionistic mentality has not been successful.

Also, the dichotomy between "hard" and "soft" sciences is a situation in transition for, as I said above, some "soft" sciences are beginning to overlap substantially with the "hard" sciences. As well, chaos theory and fractal geometry, coupled with occult notions, pave the way for true mechanistic explanations in the "soft" sciences.

3.2 Chaos, Fractals and Quantum Theory

What are fractal geometry and chaos theory and why are they relevant with regard to explaining human behavior? Furthermore, what does this have to do with occultism? This second question we will return to later. Let us now focus on the first question.

Both fractal geometry and chaos theory are new paradigms in modern science. Each is a new mathematical approach that, when applied to Nature, gives surprisingly accurate results with respect to understanding the mechanisms being studied. What one must realize with regard to these two new approaches is that before their time, most systems and phenomena studied with traditional mathematical approaches fell apart when it came to the accuracy of the traditional model in describing real world situations. That is, traditional physics and chemistry had many mathematical descriptions of natural processes, but always these models fell short of describing real situations in the real world and usually could only describe very limited events that occurred in the laboratory (a good example of this in physics is the mathematical theory of

statistical mechanics). So physicists and chemists spoke of "ideal cases" and then twisted and contorted their mathematical models to fit real life. In a sense, this is like cheating. However, with the advent of chaos theories and fractal geometry, scientists no longer need to "cheat" in such a fashion when they describe the real world with mathematics because these new theories, when applied to real world situations, give real world answers.

Again, chaos theory is a mathematical approach to studying the world. It allows scientists to understand such diverse phenomena as a pot of boiling water, the distribution of a population of animals over time, weather patterns, and how the brain organizes sensory input. What underlies these diverse phenomena is the same mathematical principle. The mathematical principle that underlies chaos theories is that seemingly very complex behavior can be understood in very simple terms. In chaos theories, one takes a usually very simple nonlinear equation (a nonlinear equation is one that when graphed out does not give a straight line) and subjects it to a process known as iteration⁶. When one iterates a nonlinear equation, one gets a graph much different than one would obtain by plotting the equation by normal means. The graph produced by iterating the equation is very complex and shows very subtle behaviors. Such graphs define what scientists call attractors (also called "modes" or "orbits").

An attractor is a stable state to which the system represented by the graph will be attracted. For example, if we drop an apple to the floor, then the floor would be an attractor. Or if we were to roll a marble around the edge of a funnel, it would eventually roll down the side and come to rest at the neck of the funnel. In this case the neck of the funnel would be an attractor. Mathematically, these examples would be known as simple attractors. There are two more classes of attractors recognized by scientists and these are called periodic attractors and chaotic (or "strange") attractors.

An example of a periodic attractor would be the four seasons that repeat over and over again in the temperate climates. Here, over the year, the weather goes through four distinct phases: spring, summer, autumn and winter. These phases repeat over and over, and scientists would then say that the seasons form a periodic attractor with respect to the weather.

The final type of attractor is a chaotic attractor. The reason it is called a chaotic attractor is because it does not ever seem to repeat the same behavior. Here the system seems to jump around chaotically (thus the name "chaos theory") from one state to the next and makes no definite pattern. An example of a chaotic attractor is the day to day weather of a region. One day it may rain, the next day it may be sunny, then the following day it may be cloudy. There is no repeating pattern to day to day weather. In spite of the fact that over time there are large-scale or seasonal patterns to the weather, on a day to day basis, the weather is relatively unpredictable. This day to day unpredictability of the weather is called by scientists a chaotic attractor.

So the essence of chaos theories is the understanding of a phenomena in terms of what type of attractor behavior it exhibits. A system whose behavior may be very complex may actually be described by a simple nonlinear equation that is subject to iteration.

We can see how the ideas of chaos theory may be applied to human behavior. Consider our memories, for example. Each of us has many stable habits of thought; we remember our name, where we live, what our job is, the events of our past. In a sense these types of memories are periodic attractors; they are repeatable and stable states that our minds

will go to. Likewise, we have our daily social routines such as getting up, going to work, coming home and eating dinner, going to sleep, then getting up the next day and repeating the process. So our daily social routines too can be thought of as periodic attractors.

But there are other aspects of our life that are repetitive, yet never repeat exactly. Whenever we learn anything it falls under this category. We repeat the learning process, but each time we get better, as for example when we learn and practice a musical instrument. The fact that our minds can adapt to new circumstances and that we can learn new things, even to old age, points to the presence of chaotic attractors in our psychology. For if we were locked only into periodic attractors, then our actual behavior would be totally inflexible, and we would be like automatons or robots. The flexibility of "trial and error" is in reality an indication of chaotic attractor states at some level in our psychology. The same is true with our daily social routines. They repeat on a broad level perhaps, but the day to day details are different each time around that they cycle indicating the presence of chaotic elements. Thus chaos theories may help to bring about a transformation in psychology and sociology and improve our understanding of the mind and human behavior, and as well serve as a point of relation between the "hard" and "soft" sciences.

Before I leave the topic of chaos theories, I would like to point out that there is a fundamental difference between chaotic behavior and random behavior. Something that is chaotic is not random; these are two completely different mathematical notions. The real difference here lies in the mathematics used to describe each type of behavior. Random behavior is described by a branch of mathematics that is known as probability theory. Here we talk about odds and one in one thousand chances. Randomness applies to rolling dice or winning the lottery. When we are dealing with randomness we predict the odds that a certain event will be realized. This is not the way a chaotic system works. As we saw, chaos is described by different mathematics, the iteration of nonlinear equations. The iteration of these equations produces attractor states, either simple, periodic or chaotic attractors. Because of these mathematical differences, chaos is predetermined (or "deterministic" in the jargon of mathematics), but randomness, by definition, is not. Furthermore, and what is important to scientists, is that when we find the attractor states of a phenomena by chaos theory, this points to definite cause and effect relationships between the variables we used in the nonlinear equations. There is no cause and effect relationship in probability mathematics. Thus, chaos theories allow scientists to make mechanistic models which could not be made by using probability theory. This distinction is important because, in the application of chaos theory to human behavior, events that we may have thought were mathematically random may actually be mathematically chaotic. Traditionally, statistical methods have been the only mathematical means utilized by psychologists, sociologists and other "soft" scientists. Thus, chaos theories may eventually provide a mathematical framework for the social sciences, bringing the social sciences much closer to being "hard" sciences.

Now let us turn to fractal geometry. Fractal geometry is a new branch of mathematics that gives us a new way to describe shapes. The shapes described by fractal geometry are called, not surprisingly, "fractals". Fractal shapes are extremely life-like compared to the circles, triangles and parabolas of traditional geometry. Fractal shapes look exactly like real clouds and real trees and real landscapes. Plates 5, 6 and 13, and Figure 9 show examples of fractal

shapes and also illustrate some of the properties of fractals. Fractal curves, like the equations in chaos theories, are produced by the iteration of simple nonlinear functions. Actually, most chaotic attractors are fractals as well. Figure 9 illustrates a "chaotic fractal"⁷.

Aside from the very organic and life-like appearance of fractal shapes, as seen in the illustrations, the main property exhibited by fractals that sets them apart from traditional geometric shapes is a property called "self-similarity". Self-similarity means that the same pattern repeats at different scales or levels of resolution within the picture. That is, if we take a fractal curve and enlarge and magnify some small region of it then this small region will appear to look like the whole fractal curve. We can see this property very clearly in Plates 5 and 6, and Figure 9 in that the main pattern of each of these fractals is made up of ever smaller copies of itself. The founder of fractal geometry, Benoit Mandelbrot, proposes the following definition of fractals based upon their property of self-similarity: "A fractal is a shape made of parts similar to the whole in some way"⁸. We shall see that this definition will make it very easy for us to equate occult and fractal concepts in upcoming discussions.

If we look at Plate 13, we see a subtler example of self-similarity. Plate 13 illustrates what is called a "fractal zoom". The fractal in Plate 13 is very important and is called the "Mandelbrot Set", named after its discoverer Benoit Mandelbrot. In frame a of Plate 13, we see the beetle-like shape of the Mandelbrot Set. Frames b-h are progressive magnifications, or blow-ups, of the boundary of this set. What we will notice though, is that in frame g, we find another beetle-like Mandelbrot Set repeated in the depths of our original set. This is a subtler example of self-similarity in which we *eventually* come across our original pattern, instead of having the fractal simply being made up of ever smaller copies of itself. I will discuss more about these plates later when it is necessary to introduce fractal concepts in an occult context.

This notion of self-similarity of fractal curves is very important in terms of understanding the relationship between science and occultism and we will return to it again and again throughout this book.

Implied in the concept of self-similarity is another important concept in fractal geometry and that is the notion of levels of resolution. Here we are referring to the *nesting* of pattern within pattern within pattern. Ultimately, this nesting of patterns within patterns goes on to infinity. This was Ezekiel's vision of circles within circles within circles. The importance of this notion is that we begin to realize that any phenomena is in turn made up of other phenomena, these in turn being made up of other phenomena.

A real life example of nested levels of resolution is found to be ourselves and the world we live in; our bodies have nested within them the various organs (hearts, livers, kidneys, brains, etc.), in turn the organs have nested within them cells, the cells in turn have nested in them what are called organelles (these are such things as mitochondria, nuclei, ribosomes, etc.), nested in the organelles are molecules like proteins and DNA, RNA and other biological molecules, nested within these molecules are atoms such as carbon, nitrogen, oxygen and others, nested within the atoms are subatomic particles like protons and electrons and neutrons, nested inside the subatomic particles are things called quarks, and it is not known today in science if there is anything nested inside of quarks (we will see, however, that occultism teaches that there are particles nested inside of quarks. These are called "Ultimate Physical Atoms" and are illustrated in Figure 4. These will be discussed in chapter 6, section 6.2.4).

Now if these patterns of nesting inward seem complex, well we can go the other way too; we humans are nested inside of our societies, our societies are nested in the biosphere of the Earth, the Earth is nested inside of the solar system with the other planets, our solar system is nested inside of the Milky Way Galaxy along with billions of other stars, and it is known that the Milky Way Galaxy is nested inside a cluster of other galaxies in what is called "the local cluster", and this cluster is part of a larger cluster, and on and on it goes beyond our ability to perceive. Thus, that our very lives are made up of all of these nested levels of resolution points to the fact that reality, or the world, or the universe, or what ever you want to call it (later in the book, what I am here referring to I will call the "physical plane") is in some sense a vast and living fractal shape. However, to consider the entire structure of the physical world to be a fractal will require that we utilize the notion of self-similarity in a very subtle fashion which will be provided by occult concepts.

Thus, as well as being a new way to deal with shapes, *fractals provide us with a new conceptual means of organizing the reality of our experience.*

Now, with some understanding of what chaos theories and fractal geometry are, I would like to spell out why these are important to my purposes in this book. First, as I said earlier, both of these theories are new-comers to modern science, neither being any more than twenty years old. Both have their roots in the 1960s (though fractals have ancestors that extend to the late nineteenth century, and chaos has attracted the attention of thinkers for centuries, most notably Leonardo da Vinci), and both were only really recognized in the 1970s⁹. Thus, these developments represent new paradigms in modern science. In spite of the enormous popularity of these new disciplines, their effects have barely begun to be felt in modern science. Together, these new paradigms introduce into science notions that will eventually transform the entirety of modern science, and thus our technology and how we view ourselves. The new and important notions these two disciplines introduce into modern science are:

1. Complex phenomena can be understood by simple mathematics. That is, things that were previously seen to be random, such as day to day weather or learning, are now realized to be chaotic processes.
2. Natural phenomena exist as a hierarchy of nested levels of resolution.
3. Natural phenomena can display self-similarity.

In many respects, the really important new conceptual element for modern science is that *the notions of fractals and chaos provide completely new means of understanding how Nature can be organized.* Fractals and chaos represent organizing principles that have until now remained unrecognized by modern science. As I will discuss and illustrate in upcoming chapters, the organizing principle of self-similarity as embodied in fractal geometry has long been recognized in occult teachings in what is known as the "Hermetic Axiom". The Hermetic Axiom is stated "As Above, So Below". As is very clear from the context in which the Hermetic Axiom is used in occult writings, occultists have always viewed Nature in a fractal form. And the organizing principle behind chaos is that seemingly complex and random behaviors can be easily understood in terms of attractor states, ideas which have been foreshadowed by occultism.

Leaving for the moment fractals and chaos theory, I also stated earlier that quantum mechanics will play a fundamental role in understanding the relationship between modern science and occultism. Here I would briefly like to discuss quantum mechanics so as to lay a basis for upcoming discussions. Again, quantum theory has been very well popularized¹⁰ so I will dwell on an interpretation that is relevant to my purposes here.

Quantum mechanics is a paradigm. The quantum mechanical approach to natural phenomena was a departure from the classical Newtonian approach to motion and energy. In Newton's paradigm, motion and energy were both seen to be continuous phenomena. That is, distances, times, and the values of energy that an object could have could take on any real number. Yet it was experimentally discovered that these ideas did not apply to our measurements of microscopic phenomena such as the behaviors of atoms, molecules, or electrons. It was found by Max Plank, J.J. Thomson, Ernest Rutherford, and others around the turn of the century that the microscopic behavior of these objects was discrete. That is, the energy of an atom could only take on certain discrete values and not any value. The difference between continuous and discrete is the difference between the real number line where we can express fractions and irrational numbers (like $\sqrt{2}$) on the one hand, and the counting numbers (1,2,3,...) with no fractions in between on the other hand. Thus, the quantum mechanical paradigm came about to account for the discreteness of the microscopic events physicists measure.

To account for this discreteness, new mathematics had to be used in quantum mechanics that were not used in the Newtonian paradigm. The mathematics of discreteness used in quantum mechanics are in large part embodied in what is called the Schrödinger Wave Equation, introduced in 1926 by Erwin Schrödinger, and in an equivalent mathematical formulation known as the matrix mechanics put forth by Werner Heisenberg, Max Born, and Pascual Jordan at the same time. The technical details of this mathematics are far beyond the scope of this discussion, but the concepts that derive from this mathematics are highly relevant. As well, it is fair to point out that many mathematical refinements have been presented in quantum mechanics since the days of Schrödinger and Heisenberg, but these will not concern us until later discussions.

The essence of the Schrödinger wave equation is exactly what it says. This equation is an equation of a wave but it is applied to particles such as hydrogen atoms. Now the famous de Broglie relationship states that the momentum of a quantum particle is proportional to the wavelength of the particle. It is this de Broglie relationship that is the basis of the famous wave/particle duality in quantum physics. This relationship states that any quantum particle can literally be viewed as either a wave or a particle depending upon how it is measured¹¹. I want to make a clear distinction between the wave/particle duality of the de Broglie relationship and the wave description of a particle embodied in the Schrödinger wave equation. This distinction is important because in the Schrödinger equation, a particle is *literally* viewed mathematically as a wave. To quote the text from which I learned quantum mechanics:

"Schrödinger, reasoning that electronic motions could be treated as waves, developed wave mechanics. In this treatment, he took over the great body of information from classical physics about wave motion and applied it to

atomic and molecular motion. The stationary states that an atom or molecule might have were analogous to standing waves (such as occur on a violin string)...¹²

What I am trying to do here is to explain the wave nature of matter differently from most popular accounts of the wave/particle duality of matter. The wave equation is in many respects conceptually similar to the type of equation used to describe a simple sound wave. We know that a simple tone, say one produced by striking middle C on the piano, is made up of a fundamental tone and its associated harmonics. The harmonics occur at discrete intervals of frequency over the fundamental tone. This situation is analogous to describing an atom using the Schrödinger wave equation. An atom can literally be thought of as a fundamental tone with its associated harmonics¹³. When we speak of the fundamental tone of an atom we call this the "ground state" of an atom. The harmonics of the atom are called "excited states". What is known as a "quantum transition" is when the electrons of the atom go from the ground state (fundamental tone) to one of the excited states (harmonics). A quantum transition is not as unfamiliar an idea as scientists and philosophers have led us to believe. The way a melody of a song moves discreetly from note to note is just like a quantum transition. That is, a quantum transition is a harmonic transition.

Thus, if we literally interpret the Schrödinger wave equation, then an atom is, in some fundamental sense, analogous to a sound wave (though there are technical differences of course). Normally, in the common interpretation of quantum theory, the fundamental tone and harmonics that define the atom are interpreted to be the probability of finding the atom at some location in space. Granted this accepted interpretation works perfectly well, as is attested by all of our modern quantum technology (such as semiconductor chips or lasers, or the variety of instruments used for experimental measurements). Yet one must ask what this accepted view (the Copenhagen Interpretation) provides for us: is it an accurate description of Nature, or merely a description of the technologies we have devised?

What I am saying here is that, instead of interpreting the equations of quantum theory to indicate the probability of finding a particle at some location in space¹⁴, we can instead interpret these equations to say that *matter is literally a tone*. As a tone is a wave propagating through the medium of air, an atom is a "tone" propagating through the medium of the quantum vacuum (the quantum vacuum is the sum of the energy fields of Nature: the weak and strong nuclear, electromagnetic and gravitational fields). Thus, physical matter, when viewed through the paradigm of quantum theory, can be thought of as a vast symphony of atomic tones.

That we can literally think of an atom as something akin to a musical tone is the main point I want to make in this discussion, and this is not something stressed in popular expositions of quantum theory. However, I want to stress here that I am not saying that atoms obey harmonic rules that are identical to the harmonic rules of combination of Western music theory, or any other human system of music theory. What I am saying is that atoms are analogous to any system of music theory in that atomic structure (and nuclear, sub-nuclear and molecular structures as well) defines for itself its own internal system of harmonic combination and interaction. Within such a system we can then think of the behavior of atoms, nuclei or molecules as songs or polyphonies.

If we begin to think of atoms being like musical notes, then we can understand that atoms will combine and form combinations that are like songs. This metaphor will make it very easy for us to understand how and why atoms behave as they do. Some atoms are more likely to combine with each other in just the same fashion that some tone combinations sound better together than others. Stable arrangements of atoms, which are called molecules, are very much like a polyphonic piece of music. Furthermore, this metaphor of thinking of an atom as a tone will allow us to understand the behavior of atoms much more intuitively. Atoms resonate, they resonate at certain frequencies, these frequencies being defined by the Schrödinger equation (or other similar formalisms or approximation methods). Atoms obey all of the properties tones do. If two atoms are "out of tune" with each other, that is they don't resonate in a harmonic combination, then they will push away from each other. This is the process of electrical repulsion, and it is a process much like tonal dissonance. If the atoms resonate in phase with each other, or form a harmonious combination, then they will be attracted to each other to the degree of their overlapping resonance. That is to say, electrical attraction is just like musical harmony. If the atoms resonate at frequencies far removed from one another, that is, there is a vast separation in their frequencies, then they will be invisible to each other, just the same way we cannot hear a tone that is outside of the ear's frequency range.

Taking this approach to quantum theory is very valid and highly intuitive, and it illustrates a very important feature of the quantum mechanical paradigm. This is that *physical matter is vibratory patterns*. Again, we can liken the world that we know to be a combination of atoms to be a vast symphony of quantum resonances. Such an interpretation completely supersedes the mythos and mystique that surrounds the counter-intuitive aspects of trying to interpret the quantum mechanical paradigm in particle terms. Indeed, this is why the ancients required the study of music alongside the study of mathematics and Nature.

Likewise, we can view light in exactly the same fashion. Light (or more precisely, electromagnetic radiation) is also a vibratory pattern like matter, except that light vibrations are at a different *type* of frequency than atomic vibrations (in occult terms, light is a different, though related, type of matter from atoms as we shall discuss ahead). The same rules of harmony and dissonance apply with light and how it interacts with other frequencies of light, and how light reacts with matter. Light causes an object to be colored and the color you see represents the frequencies that the light and the matter do not have in common. The light reflected off an object contains the frequencies not absorbed by the object, that is, the frequencies of the light that the object does not resonate with and thus repels. That light will pass through a transparent window indicates that the light you see and the atoms that make up the window do not share any frequencies, thus the atoms are invisible to the light.

Incidentally, I do not think it is simply a coincidence that there are seven colors in the visible spectrum and seven tones to a musical scale. The rules of color combination using the three primary colors of red, blue and yellow have much in common with the music theoretician's rules of harmony combination using the first, fourth and fifth scale tones in a major scale. Both lead to an incredible plethora of variety on their respective levels.

This whole approach to quantum theory is essential for understanding how occult notions fit in with science, for occultists view the world as so many complex vibratory patterns and so do quantum physicists. And using the musical analogy I developed above will help make

it obvious that occult and quantum descriptions of the world are identical. Furthermore, as I stated already, we shall see that occultists teach notions that are identical to those found in fractal geometry and chaotic systems theory. To foreshadow my conclusions somewhat, what I shall do for the rest of this section of the book and throughout the entire next section is support the claim that if we interpret occult concepts in terms of quantum theory, fractal geometry and chaos theory, we will find that occult notions are highly compatible with modern science. And second, we will see that, in general, occultism is a set of paradigms that can be interpreted as describing human behavior in quantum, fractal and chaotic terms. Thus my ultimate goal here is to show that we can unify the "hard" and "soft" sciences by interpreting occultism in terms of these three modern scientific theories.

Notes: Chapter 3

¹One of the most excellent histories of science during this period I have read is Boas, (1962). This work is especially interesting because it is written in a fashion that stresses the fact that science and occultism used to be identical.

²Jaffe, (1960), page 25.

³The theory of social rationalization was created by the great German sociologist Max Weber. As defined by Weber, a "rational" form of social organization is to be distinguished from a "traditional" form of social organization. This distinction is based on the fact that the rules (norms and values) of a "traditional" society remain constant from generation to generation, but those of a "rational" society are always in a state of flux. For a development of this theory see Weber (1947). What I am doing here saying that the tradition of our Western civilization is "rational" is pointing out the paradoxical situation that the implicit and unchanging norm of our civilization is to seek to change its values.

⁴The classic book portraying the competitive image of modern science is Watson, (1969). This book was supposed to have created quite an uproar in the scientific community when it was initially published because it so blatantly made apparent the competitive mentality of modern science. This book did much to shatter the mythical image of scientists working together in harmony trying to unfold Nature's secrets. Incidentally, this book is fun and quick reading and is highly recommended.

⁵The full theory of paradigm transformation and scientific revolution is worked out in the now classic Kuhn, (1971).

⁶For the reader interested in obtaining knowledge of constructing iterated equations see Gliek, (1987), or Peitgen and Saupe, (1988), chapter 3.

⁷The mathematical reasons for calling this fractal "chaotic" are beyond the scope of this book. The interested reader may find details in Peitgen and Saupe, (1988).

⁸Feder, (1988). page 11.

⁹The concept of fractals and fractal geometry was introduced in Mandelbrot, (1977) and made wide-spread in Mandelbrot, (1982).

Chaos theories arose through many independent efforts. For a good history of chaos theories see Gliick, (1987). For a technical introduction to Chaos theories see Infeld and Rowlands (1990).

¹⁰For popular accounts of quantum mechanics, see for example: Gribbon, (1984), Hawking, (1988).

¹¹I would suggest that a more accurate interpretation of this equation is not that particle and wave behavior are equivalent, but that under certain conditions, some wave patterns behave as if they were particles. The idea here is that Nature consists only of wave patterns but that under suitable conditions, such wave properties can be treated as particles. These would be standing waves, as Schrödinger's approach describes.

¹²Hanna, (1981), page 45.

¹³The standing wave patterns predicted by the various boundary conditions applied to the Schrödinger wave equation are conceptually identical to standing wave patterns generated by musical instruments. And such standing wave patterns correspond to the distribution of harmonics over the fundamental tone. Thus, the standing wave patterns generated by wave mechanics can be thought of as representing the harmonic distribution of atomic and electronic states. In other words, what I am saying is that we could theoretically design a musical instrument whose relative harmonic distribution is identical to, say, the exact solution of the hydrogen atom. Such an instrument would let us literally hear what a hydrogen atom sounds like in terms of the relative relationship of the harmonic distribution of hydrogen.

¹⁴The issue of the use of probability in quantum theory has always been in question. Einstein, for example, did not believe that this was a fundamental interpretation. One way out of such a dilemma is to substitute chaos theory for probability theory as we have seen is possible in other sciences (psychology, ecology, meteorology). Alternatively, we must realize that the use of probability theory in quantum mechanics is due to the use of noncommuting matrices in the description of quantum mechanical dynamic variables. This situation has come about because of the need of physicists to continue to attempt to conceptualize microscopic matter in particle terms. It is likely that, if the need to view matter in particle form is completely given up, and instead a musical or purely wave approach is adopted, then the use of probability could be superseded. That is, if microscopic dynamic behavior was thought of in terms of patterns that

are analogous to musical patterns, then a more fundamental understanding of matter would result. This is precisely the occult view. This line of thinking is elaborated on in chapter 13.

Chapter 4. A Survey of Contemporary Occultism

What I will do in this chapter is to, first, attempt to expunge the common view of the occult and siphon the fact from myth and misconception. Secondly, after we have established what the occult is not, then, in the next two chapters I will review the works of some of the more prominent occult authors of the twentieth century in an attempt to delineate what the occult is.

To the scientifically minded, I don't think there is any worse term than "occult". Yet, to the scientifically minded, I do not think there is any other term that has been so misunderstood. To the popular mind of our culture the word "occult" brings to mind images of bizarre rites and rituals, devil worship and human sacrifice, and all of the other strange atrocities that fill our collective imagination. For example, let's consider this remark by Rudy Rucker in which he is attempting to distinguish occultism from mysticism:

"Mysticism is not to be confused with occultism which has to do with strange rites, secret formulas, and so on. Mysticism has no direct relationship with astrology, devil worship, fortune-telling, drug abuse, health food or ESP."¹

There is a strange mix of fantasy and reality here in Rucker's description of the occult that I think is representative of common beliefs. Rucker is correct in separating occultism from mysticism and I have discussed this issue already. Yet to say occultism has to do with strange rites and secret formulas is really not saying very much. Science also deals with strange rites and secret formulas. A typical treatise on mathematical physics is just as obscure and unintelligible to the uninitiated as is a Cabalistic treatise on the Tree of Life. So which of these is the more secret formula? And as far as strange rites go, I really don't see much difference between the popular image of the witch standing over her bubbling cauldron reciting strange Latin phrases and a chemist stirring his bubbling reaction flask and also reciting strange Latin phrases. Different costumes and different motivations no doubt (and different sexes as well, which gives us some clues as to hidden assumptions in each respective world-view), but both activities can quite legitimately be considered "strange rites and secret formulas".

Rucker is correct in associating occultism with astrology and fortune-telling, but to include these occult disciplines in the same sentence with devil worship, health food, drug abuse and ESP makes me question his understanding of the former. These latter topics have little if anything to do with occultism, in a purely formal sense at least. Devil worship is a purely Christian phenomena and ESP is a term from parapsychology. Health food and drug abuse are more social fads than anything else, and as such give us a clue to the time period in which Rucker's quote was made. Probably the reason Rucker groups all of these topics together is because each attracts people who would be considered "weird" in terms of mainstream behavior. At least this is the only connection I can see amongst all of the disparate topics that he is associating under the heading "occultism". Nonetheless, his viewpoint, though quite typical of common attitudes, reflects a gross misrepresentation of what the occult is. Most references

to the occult that one finds in scientific oriented literature are usually based on little more than hearsay and misconception.

There is indeed a vast literature and tradition of occultism stemming from the depths of antiquity and most scientists, as well as everyone else, are simply unfamiliar with this fact. Even the most superficial survey of the occult traditions will show the serious student that there is way more than one supposes in regards to what occultism really is. So it is unfair and even hypocritical for science oriented writers to comment on matters that they really know nothing about, especially in light of the fact that scientists are supposed to be the most objective of us all!

Attempting to understand what the occult is really about is no easy task. First off, as pointed out above, one must wade through a jungle of prejudice and misconception before one finds the real thing. And secondly, once one does find the real thing, it turns out to be vastly complex, and not a simple topic in the least, as we shall soon see.

In terms of further misconceptions of the occult, I think that it is an unfortunate accident in the evolution of the English language that the words "occult" and "cult" sound so much alike. On paper it is easy to see the difference, but when speaking it is easy to confuse the two. I think that one of the minor but important reasons for so many of the misconceptions of the occult lies in the ease of confusing these two words when we are talking. One hears on the news about the latest cult killings down in South America or what have you, and one automatically thinks "occult killings". The association of Devil worship with the occult is in part grounded in the confusing of these two words. Devil worshipping is a cult activity, not an occult subject. The only level an occultist might be interested in the Christian Satan is either in the comparative study of religions (which is indeed an occult topic²) or in understanding Satan as a powerful thought-form on the astral and mental planes³. Otherwise, an occultist is hardly interested in worshipping such a one-sided myth as Satan, let alone worshipping anything at all.

There are other, and more substantial reasons for the popular image of the occult in our culture and the associations of such occult topics as witchcraft, astrology or magic with Satan. The fact that we associate the occult with Satan in the first place suggests the actual origin of this association. These images of the occult arose historically through the systematic attempt of the Medieval Christian Church to eliminate competing belief systems. Thus, whatever ideas the Church felt did not fit in with its world-view, it branded as the work of Satan. Violators who clung to these Satanic ideas were recognized as heretics and mercifully slaughtered by the Holy Inquisition. Thus, the repression of occult ideas by the Church forced the occult to go underground. What this meant is that those who studied or practiced occult techniques, or those who simply believed things different from Church imposed dogma, had to form secret societies and/or complex and deceptive symbologies of the occult teachings (as was the case with Alchemy). That the Church is responsible for the forcing underground of the Medieval pagan and occult systems is a well-discussed fact and I will not dwell on the issue anymore here. The interested reader may find any number of good books on this topic⁴. The point here is that the popular association of Satan and occultism is a historical vestige and has little to do with the reality of occultism.

At this point I would like to address the connection between occultism as I am defining it here and a currently popular trend known as the "New-Age" movement. Historically, the

New-Age movement of today is highly reminiscent of the "spiritualism" of the late nineteenth and early twentieth century. In these movements we have a mass popularization of some small subset of ideas that one will encounter in occult teachings. Usually these popularizations are gross decontextualizations of actual occult teachings and can potentially be psychologically dangerous for those involved. Movements such as these can generate lots of press and only further serve to muddle public images of occultism. Such popularizations can be very misleading to the serious student of occultism. When I speak of occultism, I am referring to a very definite kind of knowledge which will be defined below. I am intentionally using the term "occultism" to avoid any association with such popular fads as the New-Age movement.

The occult then is not Satan worship, it is not some nebulously defined "strange rites and secret formulas", and it is not some temporary fad. Well, if it's not these things, then what is it? In a previous chapter, I presented a discussion arguing that occultism is not mysticism, but very little detail was given to what occultism actually is. So at this point, our question is: What is occultism? If you were to ask occultists this, they would most likely answer that the word occult itself derives from Latin and means "that which is hidden". Even in my version of Webster's dictionary this is what is found under the word "occult":

"1 : not revealed ; SECRET 2: ABTRUSIVE, MYSTERIOUS 3: of or relating to supernatural agencies, their effects or knowledge of them."

For a first approximation, this is actually a fairly good definition, but only for a first approximation. Indeed the occult claims to be the study of hidden forces and of "supernatural agencies", but then, therefore, the study of the occult is actually the *revealing* of these hidden or supernatural processes. The occult is, very much like science, a collection of theories and techniques, that is, paradigms, regarding Humankind and Nature and the relationship between them. And like the word "science", the word "occult" can be used to designate the entire body of knowledge and techniques related to the understanding of the hidden sides of Nature. What follows now is a brief and highly incomplete survey of the various fields of knowledge that constitute occultism.

It is convenient to understand the occult in terms of the distinction between Eastern and Western occultism. In terms of content this is a fairly arbitrary distinction because there is so much overlap in the content of the various ideas (which incidentally points to common historical origins as well as to a kind of empirical validity in that different cultures in different time periods would identify and describe very similar "hidden realities"). As well, much innovative work has been done during this century to blend Eastern and Western approaches to occultism (as will be illustrated below) further blurring this distinction. At any rate, for explanatory purposes the distinction is quite useful.

Eastern occultism derives from sources in the Far East, primarily India, Tibet, and Asia. These teachings consist of the various branches of yoga such as Raja Yoga, Karma Yoga, Jnana Yoga, Hatha Yoga, Laya Yoga, Bhakti Yoga and Mantra Yoga⁵, as well as Tantra. Also, Taoism, Zen and certain sects of Buddhism could roughly be classified as occult teachings, as opposed to being thought of merely as religious systems. Each of these disciplines embodies a complete set of teachings and techniques that gives them an autonomy and

independence from each other in the same fashion that the various branches of biology, such as embryology, anatomy and zoology are independent of each other yet mutually interrelated.

I would like to point out here that yoga is something much different than is popularly thought here in the West. When most people think about yoga, they tend to think of exercises, or sitting in strange postures, or perhaps meditation. Yoga is seen in the West as a recreational activity related to health and relaxation. But in the East, yoga is seen as a science of the mind. The exercises, meditations and postures of yoga are but one small facet of the vast set of teachings that makes up the branches of yoga listed above. The bulk of these teachings is related to understanding the mind, and the overall intent of yoga is to achieve enlightenment. The word "yoga" means "joining", and the joining to be achieved is that the individual is to join with the universal. Thus, yoga is ultimately a set of techniques aimed at experiencing the mystical state, or cosmic consciousness.

Western occultism, on the other hand, derives from ancient sources in the Middle East and Mediterranean, such as astrology from Chaldea, or ancient alchemy that derived from presumably Egyptian sources⁶, or the Cabala that stems from the ancient Hebrew mystical tradition. Later many of the teachings passed on by Mediterranean civilizations were modified by Western Europe during the Dark and Middle Ages. Thus, our occult inheritance today in the West consists of such disciplines as Astrology, Cabalism, Alchemy, Numerology, Tarot, Ritual Magic and Theosophical Occultism. Again, each of these disciplines is a complete set of teachings and techniques aimed at an understanding and mastery of Nature's "hidden" sides.

As is characteristic of the difference between Eastern and Western approaches, Eastern Occultism is focused more inwards and relates primarily to subjective experience, whereas Western Occultism is focused more towards the external world and concerned with such things as predicting the course of events in time and space or describing the evolution of growth and form. As well, again reflecting historical tendencies, Eastern occultism is much more experience oriented and stresses techniques aimed at experiencing "altered states of consciousness", or states of consciousness different from, but related to, our normal waking consciousness, as can be experienced through yogic practices. On the other hand, Western occultism is much more intellectual and focuses to a greater extent on the manipulation of systems of symbols for purposes of divination or the control over physical circumstances, and to a much lesser extent emphasizes the actual experiencing of nonphysical states of consciousness. Thus Westerners have Tarot decks and astrological birthcharts. However, these dichotomies are not as pronounced in occult thinking as in other intellectual disciplines such as traditional science and philosophy, and the Eastern and Western forms of occultism provide each other with a type of mutual complimentary, feeding and enhancing each other. This in turn gives the overall occult approach considerable leverage and validity in terms of describing human experiences.

As well as Eastern and Western forms of occultism, there are and have been various "secret societies" that embody occult teachings such as the Rosicrucian, Hermetists, the Free Masons and the Alchemists. It is not my purpose here to explain in detail each of these branches of the occult. It would take us too far afield from the theme of synthesizing scientific and occult concepts and frankly, I am simply not qualified to discuss these systems of thought in any great detail.

But it is important for the reader to understand and appreciate that all of this together constitutes what is rightfully considered "occult". And even these many fields and disciplines represent what one may call "traditional" or "classical" occultism. Further ahead when I discuss various occult authors we will see that many innovations have occurred in twentieth century occult thought leading to what one might consider "modern" occultism, and it is indeed these more modern formulations of occult teachings and principles which point to the potential for a synthesis of scientific and occult world-views.

Having completed our brief survey and, without going into any of the details of the specific disciplines listed above, can we however delineate the underlying characteristics of the general occult world-view or paradigm and see how these fit in with the general world view of science?

It was hinted in van der Leeuw's quote that the occultists claims that the physical world is not the only world there is to study;

"The claim of occultism is that this physical world is not the only world which can be investigated scientifically: it teaches that there are worlds of subtler matter which can be explored scientifically by those who have developed the faculties of perception in those worlds... clairvoyance...clairaudience and other similar faculties."⁷

I'm repeating this because it is so concise and I could not have put it better myself. Here in this quote too is the first step in understanding the general outlines of the occult world-view. Occultism, in all of its branches, teaches in some form or another that the physical world is not the only world, sphere, dimension, or whatever you shall call it, in which humans can be active. As van der Leeuw says, occultism teaches that there are subtler worlds than the physical world, worlds that are not physical, or we may say "nonphysical" (as we shall throughout the rest of this book), that human consciousness can interact with and understand in a "scientific fashion" (exactly what is meant by "scientific" in this context will be made clear further ahead). This issue of nonphysical worlds--or "planes" as they are called by occultists--is extremely important and we shall return to it time and again throughout many of my discussions. As well as the concepts of nonphysical realities, there are some other fundamental and underlying axioms of occult thought.

As well as "hidden", nonphysical worlds, occultism teaches that there is a hidden, or occult, anatomy to human beings, this anatomy being intimately related to these nonphysical worlds. In this connection, occultists will use such terms as "auras", "chakras", "kundalini", and they will speak of the nonphysical bodies that a human possesses; the "etheric" body, the "astral" body, "mental" body, "buddhic" body, etc.. The nonphysical bodies, according to occult teachings, are the reality behind our subjective behaviors of thinking and feeling, and as well are related to dreaming and other altered states of consciousness. Also, it is in the concept of the human nonphysical anatomy that occultists explain the basis of the so-called psychic abilities. All of these notions related to the human nonphysical anatomy will be clarified as we proceed, for these notions are crucial in providing a means by which we may understand the relationship between science and occultism.

One of the most important occult generalizations is known as the Hermetic Axiom and states that "As Above, So Below". What the Hermetic Axiom means is that similar or identical principles which operate in our physical experience operate as well on the other planes, and at other levels, scales, and scopes of existence. There are many examples of the application of the Hermetic Axiom in occult thought. One such example is the idea that Man is made in the image of God, Man being the microcosm and God being the macrocosm. I have already pointed out the similarity of this notion of the Hermetic Axiom to concepts found in fractal geometry, and this similarity is fundamental to a synthesis of science and occultism. We will return to this notion and provide more examples of its application repeatedly as we continue.

Another important occult notion is the law of karma--"that which you give is that which you shall receive". This is practically a restatement of Newton's First Law of Motion--for every action there is an opposite and equal reaction--except to an occultist this law is seen to hold on all planes of existence and not just the physical. Because the law of karma is seen to operate in the sphere of human behavior, it is sometimes called the "Moral Law" and it is even recognized in Christianity as the Golden Rule: "Do unto others as you would have them do to you". Later in the book I shall outline occult theories of human behavior and at that point we shall see that the notion of karma does have direct bearing on issues of human ethical behavior. But more importantly, to the occultists, the concept of karma is an operational principle, that is, the law of karma has the same kind of literal and definite reality as the law of gravity does to a scientist. These are not simply philosophical considerations or issues of religious faith in the occult context, but are necessary corollaries to occult processes operating in human behavior. What is fundamentally important to realize about the occult law of karma is that *through this law occultists describe processes of human nonphysical behavior in a mechanistic fashion*. Again, this claim will be supported with examples as we proceed. These major occult teachings are ubiquitous throughout all of the many branches of occult teachings. I am only mentioning them here in a cursory fashion to introduce them to the reader, and if their meanings are unclear to the unfamiliar reader, fear not, for we shall go much deeper into them as we proceed.

There is another element to van der Leeuw's statement on page 20 that I would like to address at this point. That is, when we work within the context of this quote, we start right off with the understanding that, in some sense, occultism is a form of science. Yet this statement needs some qualifying. When we say that occultism is a science, it is important that we are clear as to what we mean by the term "science". There are two distinct senses in which the term "science" is used in our day to day discourse, and now it is important that these be clearly distinguished.

In the first sense of the word science, I refer to the body of accumulated knowledge, techniques and paradigms in mathematics, physics, chemistry, biology, the social sciences, computer sciences and even the various fields of engineering. That is, this first sense of the word, "science" refers to the specific disciplines that are taught in the universities and applied in government and industry.

The second sense in which the word science is used is to refer to any rationally based activity that attempts to describe Nature and to test such descriptions by some form of experimentation. The second sense is very broad and general and obviously encompasses the first

sense of the word. As well, I take Thomas Kuhn's description of the scientific paradigms to apply in this second, or more general sense of the word. Any activity grounded in a paradigm based upon some type of experimentation I consider to be science in this second, or general sense.

These two senses of the word "science" rest on the following distinction. Science itself is a form of human behavior, but how science is used is a sociocultural behavior pattern. What I am calling "sense one science" is the sociocultural behavioral pattern that is existent today in our culture. What I am calling "sense two science" is the general, and culturally independent human activity of investigating Nature by experimental means.

Thus, when the claim is made that occultism is a science, it does not mean that a science student in the universities is going to learn the fundamental principles of occultism along with the fundamental principles of physics. What is meant is that occultism is a science in that it consists of paradigms that are descriptions of Nature and that these descriptions have come about by some process of experimentation. So by these definitions, occultism is a science in the second, or general, sense of the word, but not in the first sense.

To make this claim will probably come as a shock to most readers unfamiliar with occult teachings, and also to most occultists unfamiliar with scientific methods and ideas. Most people who practice the occult do not think of what they do as science for many reasons. One, because there is a large element of dogmatism in the occult that makes it difficult at times to distinguish occult from religious activities. Yet, the rituals, spells, charms, chants, meditations and teachings of the occultist are performed, taught, and passed on because at some time in the past, whoever created the ritual did so from a theoretical and empirical basis. That is to say, most of the occult techniques in existence today have come about from the experimental efforts of some individual or group who had devised the technique and found it to work, for whatever specific purpose. This is especially true for the various branches of yoga, which are most definitely considered to be an experimental science by those who know them well ⁸, and the same can be said for such facets of witch-craft as herbology, which is the study of herbs and their medicinal value.

I would like to digress briefly to clarify the following point. When I talk about the evolution of occult techniques as being grounded in an "empirical and theoretical" basis, I do not mean to imply that say, the originators of yoga in ancient India, or the practitioners of astrology in ancient Chaldea created these techniques on a rational and empirical basis as we do today in science. As a matter of fact, they did not. These ancient cultures operated under fundamentally different world-views than we do today. Ancient occult practices that are still existent today most likely had their origins in what we would think of as a religious or metaphysical basis. However, I have made the statements in the above paragraph because it is convenient and very practical for us to interpret these ancient techniques in a modern light. As a matter of fact, we really have no other level from which to interpret them. And as well, these ancient cultures are long dead and it is highly unlikely that we could ever know the real origins of these techniques with the means at our disposal. However, most modern occult techniques and teachings have come about through scientific (in sense two) means, as we shall see ahead.

Now, a second reason that occultists tend not to think of their activities as scientific is because they associate "scientific" with sense one of the word as described above. The

occultist does not practice physics, chemistry or any other established branch of science, and so therefore does not think of her activity as scientific. But most occultists learn the skills they practice through experimentation within a guiding paradigm much the way a scientist works out the details of a theory, and so the occultist operates in much the same fashion as Thomas Kuhn described the operation of the scientific enterprise. Yet this generalization that occultists do not consider themselves scientists only has a limited range of validity, for as van der Leeuw's quote makes clear, and as we shall see when we survey occult authors ahead, some occultists indeed considered themselves to be scientists, and considered their activities to be quite scientific.

On the other hand, the claim that occultism is a form of science (in sense two of the word) is probably more of an outrage to scientists (in sense one of the word) than it is to occultists. As we have seen, scientists tend to know very little about the occult, and what they do know in terms of their misconceptions, we cannot blame them for not wanting to be associated with it. Even parapsychologists, whom more shall be said about, shun the occult as if it's a bad thing. Yet it is my hope that a thorough survey of some of the more relevant occult authors and concepts will show scientists that their fears are misconstrued, and that the differences between science and occultism are small compared to the similarities, at least in terms of how each views Nature.

Notes: Chapter 4

¹Rucker, (1982), page 226.

²The comparative study of religions is one of the main themes of Blavatsky's monumental occult work *The Secret Doctrine*.

Another example would be Leadbeater (1920).

³Ibid.

⁴Two good books discussing Christianity's impact on pagan beliefs are: Starhawk, (1982) and Seligmann, (1971), page 76.

⁵Wood, (1976).

⁶An excellent history of western occultism is Kurt Seligmann's book in footnote number four above.

⁷van der Leeuw, (1968), page 61.

⁸Taimini, (1967).

Chapter 5. The Rationalization Of The Occult.

In this section we will begin our survey of a few select occult authors of the twentieth century. The particular authors I have chosen to discuss have been picked because, in many respects they have broken away from the traditional forms of occultism listed in the previous section. These authors all share the fact that their ideas can be interpreted as an attempt to rationalize the occult in more rational and meaningful terms for the twentieth century mind. By no means are these the only authors who have attempted a rationalization of occultism, but within the context of a synthesis of science and occultism, they are, in my opinion, the best to consider. An important reason for choosing the particular authors discussed below is that much of their work has foreshadowed and anticipated developments in twentieth century science. Much of what these authors have described in occult terms has since become legitimate science (in sense one of the word as defined in the previous chapter). As well, the authors discussed below are those with whom I am highly familiar and thus most qualified to discuss. It is in fact, my interpretation of the following authors' work that sets the stage for the synthesis of science and occultism that I shall present in subsequent chapters.

Lest up to this point in my discussions of the occult I seem naive, I should like to address the following issues before I begin my sampling of selected modern occult authors. If there is one characteristic that sets occultism in general apart from more socially accepted activities, it is the intrigue and mystique, and generally negative press that surrounds its central figures. And I am talking now of the actual biographical and autobiographical sketches of actual people, that is, real history, as opposed to the social misconceptions which I discussed in the previous chapter. This is especially true with some of the authors I shall reference throughout this book, most notably Aleister Crowley, and less infamous though no less controversial, Charles Leadbeater and Annie Besant. As well, the nature of the information these authors present is usually derived from means that in most intellectual circles would be deemed less than suitable. Clairvoyant investigations, discussions with spirits, intuitive generalizations, these are not the stock and trade of contemporary intellectual means and standards. It is not my purpose here to apologize for the usually very obscure and emotionally biased accounts of certain of these figures exploits and life activities. I will, however, in subsequent discussions attempt to rationalize their sources of information. At this point in the presentation I will simply present ideas that these authors have left behind that are relevant in showing that first, modern occultism is indeed modern and highly rationalized and second, such notions are not only in most cases compatible with current scientific thinking but practically identical to it. I will not decontextualize these authors' ideas to fit my purposes either. I will present their ideas within the contexts (or paradigms) that they conveyed them and, in most cases we will see that their contexts tend to be broader and more inclusive, though encompassing of, contemporary scientific thinking.

I would like to return to the point raised above about the reputations and bad press that some of the authors I am about to discuss possess. One can ask, as I have asked myself often through the preparation of this work; If some of these people were so strange (which indeed they are from a mainstream point of view), is it really legitimate to take their ideas so seriously, especially to the point of attempting to relate them to modern science? There is in general a lot

of bogusness and fraud within the occult and many times, occult activities are little more than a front for seemingly strange and neurotic behavior. Often, prominent occult figures clearly possess (or possessed, if they are now dead) what we might take for highly eccentric or even neurotic behavior. This coupled to the often dogmatic assertions found in occult circles seems reason enough to make any attempt at taking the occult seriously seem an absurdity.

Yet it seems clear to me that such assertions could be leveled just as equally toward science (in sense one of the word) as a whole. If one is not careful at this level of thinking, the entire situation can degenerate into a useless game of name calling and finger pointing. I think in all fairness, the answer to such concerns lies in recognizing once again the social perceptions that cling to both science and occultism. Science is a socially accepted activity in our culture but occultism is not. Science is legitimized in our collective eyes, and its proclamations are taken to be truth. Occultism has no real legitimacy within the accepted culture of our times. It is a counter-cultural activity, little understood and mostly misunderstood by both the general public and its practitioners, as I pointed out in the previous section. The ultimate example of such misunderstanding is the person experiencing clairvoyant perceptions who is institutionalized and put on prescription drugs because the psychiatrist did not understand the true nature of his patient's condition. What is truly at issue here is basically separating the wheat from the chaff, so to speak; to separate useful rational concepts from hype and mystique and attempt to unravel whatever knot of truth may be present both in the myths and symbols of occultism and the myths and symbols of science. For each represent mythological systems, mythological in the very broadest of senses. And if it is our desire to truly understand, or have "knowledge for knowledge's sake"--a much bantered about and abused phrase--then we will attempt within our better judgement to glean whatever truth we can from whatever sources are available.

5.1 Annie Besant and C.W. Leadbeater



The first authors to discuss are the renowned Theosophists Annie Besant and Charles Leadbeater. These two have contributed enormously to laying a scientific foundation for occult phenomena. Both produced, either separately or in conjunction, enormous amounts of writing, easily over one hundred books and pamphlets, providing a rational basis for such occult topics as reincarnation, karma, dharma, clairvoyance and psychic abilities, occult evolution, occult chemistry, auras, thought-forms, descriptions of the nature and inhabitants of the nonphysical

planes, and many other topics of an occult nature. Even today the full impact of their work is mostly untapped, and this book is itself in large part an attempt to understand more fully the ramifications of Besant and Leadbeater's works. I will go into some detail as to the general world-view they described and the significance of their work with respect to rationalizing occult teachings. Their descriptions of occult phenomena anticipated advances in modern science in both spirit and actual content as we shall see when we discuss Occult Chemistry in the next chapter. As well, their work provides a unique perspective on parapsychological, psychological and sociological phenomena, as will be emphasized throughout this book.

The peak of Besant and Leadbeater's career was at the turn of this century. Prior to meeting one another, Annie Besant (1847-1933) was already a public figure steeped in notoriety. Throughout her life she had been involved in one social cause after another. One of the first advocates of modern methods in birth control, she was also involved deeply in the socialist movement early in her career. It was not until she was forty-two that she became converted by the Russian aristocrat Helena Petrovna Blavatsky to the teachings of the newly formed Theosophical Society. It was during the 1890s, as the leader of the European and Indian Theosophical Societies that the collaborations between Besant and Leadbeater began.

Charles Webster Leadbeater (1854-1934), though not in his day sharing the same degree of public notoriety as Annie Besant, is no less controversial a figure. Leadbeater's life is shrouded in intrigue and mystery. A recent biographer has attempted to piece together details¹, but many mysteries still remain. The whole origins of the Theosophical Society, the accounts of Blavatsky, and the roles played by Besant and Leadbeater, as well as the life exploits of these figures and others (most notably J. Krishnamurti) make up a most incredible set of stories. These have been amply documented and I have no intention of going into them here². However, the unfamiliar reader is strongly recommended to look into these biographies, if simply for the sheer drama.

Basically, it was Besant and Leadbeater who filled in the details of the world-view presented by Blavatsky. These two couched their terms and teachings under the heading of the Theosophical world-view. Theosophy as a whole was in many respects a counter-cultural movement against the spiritual ignorance of nineteenth century science, the hey-day of the philosophy of materialism. As such, Theosophy was an attempt to reintegrate occultism into the mainstream of Western Civilization. However, the teachings of Theosophy are a hybrid containing elements of science, philosophy, religion, occultism and mysticism from both Eastern and Western sources. Theosophy itself, and especially the teachings of Besant and Leadbeater are a successful fusion of Eastern and Western approaches to occultism.

In some respects, Blavatsky's works (*The Secret Doctrine*, *Isis Unveiled*, etc..) were a Noah's Ark of traditional occultism. These books are collections of many seemingly disparate teachings on occult matters from many cultures and epochs. It was Blavatsky's primary intention to show that a unified thread, the so-called "Perineal Tradition" united these fragmented systems of thought. However, it was Besant and Leadbeater who came along and formulated the disconnected and fragmented works of Blavatsky into a unified and relatively modern picture of occult teachings. Leadbeater himself brought a new air to occultism with his straight forward and matter-of-fact style about occult realities. Besant's main contribution was the applying of occultism to her lifelong preoccupation with social issues. Together, these two

authors have almost single handedly redefined occultism in a fashion that is entirely comprehensible to the modern mind. Almost all of the modern Theosophical principles concerning occult matters derive ultimately from Besant and Leadbeater. As I stated, their teachings represent a total fusion of Eastern and Western approaches to occultism. As we shall see, Besant and Leadbeater depended heavily upon altered states of consciousness, which is characteristic of traditionally Eastern occult approaches. But their scientific dispositions and thoroughly Western values and world-view led to an essentially Western adoption of traditionally Eastern occult practices and teachings. As an illustration of the scientific mentality of these authors, consider the following quote by Leadbeater:

"Most works dealing with Mysticism and Occultism are characterized by the lack of a scientific presentation, such as is exacted in every department of science. They give us far more the significance of things, rather than descriptions of the things themselves. In this little book the author approaches the Invisible World from the modern standpoint of science."³

Beyond this scientific mentality, what is characteristically unique to these authors, and to Leadbeater in particular, is their conception and actual usage of so-called psychic abilities. It was the use of these psychic abilities that provided the entire foundation of the claims and teachings they put forth. There is perhaps no better reference than Leadbeater when it comes to explaining the uses and mechanisms of psychic abilities. Leadbeater, and Besant to a lesser extent, claimed to have been able to perceive things far outside the scope of ordinary perception, and they built an entire cosmology based on these perceptions. What I would like to do now is discuss the nature of these perceptions that they claimed and the cosmology they built from them. After, and also throughout much of this book, I will then analyze the validity of their claims.

It is well known in the East and has been recorded there for centuries, most notably in India and Tibet, but as well in Asia, that certain practices of yoga can lead to the development of enhanced or superior modes of perception. The yoga Sûtras of Patañjali, written circa 400 B.C., records the ability of the yogi to develop what are called "siddhis". Siddhis are psychic abilities. It was the claim of Besant and Leadbeater that through such yoga exercises they developed siddhis of their own. They never publicly revealed the actual practices that resulted in the development of their siddhis, though it appears that these were revealed to select students in private (the most notable example being a student of Leadbeater's named Geoffrey Hodson). However, though actual exercises were never prescribed or divulged by these authors, they were very thorough in describing the nature of these siddhis, and the occult rationale for their existence.

The following quote by Leadbeater, though specifically referring to only one siddhi (that of astral sight), captures succinctly these authors' attitudes about siddhis in general:

"We are, as it were, shut up in a tower, and our senses are tiny windows opening out in certain directions. In many other directions we are entirely shut in, but clairvoyance, or astral sight opens for us one or two

additional windows, and so enlarges our prospect, and spreads before us a new world, which is yet part of the old world, though before we did not know it." ⁴

The siddhis that Leadbeater discusses open up new vistas of perception to one who develops these abilities. But what are these new vistas? According to Leadbeater, the awakening of siddhis opens up to one's perception worlds that are not physical, but are intimately related to the physical world. And these worlds taken collectively are called by Leadbeater "Planes". Much of Leadbeater's writing and a fair amount of Besant's is dedicated to describing the nature, inhabitants and properties of these planes. As a matter of fact, this concept of the planes is central to the cosmology described by Besant and Leadbeater. In their scheme, they identify seven major planes perceivable by one with highly developed siddhis. I will now discuss at some length these authors' definitions of the planes, for this notion will be critical throughout much of the rest of this book.

These seven planes, from the "lowest" to the "highest" are:

1. Physical Plane	I. Mineral, Vegetable, Animal, Human Levels of evolution
2. Astral Plane	
3. Mental Plane	
4. Buddhic Plane	II. Trans-Human evolution
5. Atmic Plane	
6 Anupadaka Plane	III. Divine evolution.
7. Adi Plane	

This three-fold breakdown of the planes is indicative of the major types of phenomena associated with the respective planes, and will serve as a reference in following discussions.

These planes are described by Leadbeater to be interpenetrating. That is to say, they all occupy the same space, or he describes it thus:

"...these different realms of nature are frequently spoken of as planes, because in our study it is sometimes convenient to imagine them as one above another according to the different degrees of density of the matter of which they are composed...But it must be borne in mind that this arrangement is merely adopted for convenience and as a symbol, and that in no way represents the actual relations of these various planes. They must not be imagined as lying above one another like the shelves of a bookcase, but rather as filling the same space and interpenetrating one another." ⁵

He also explains that there is a seven-fold subdivision of the matter of these planes, though in this case he is speaking in particular of the astral plane:

"...it must be understood that the astral plane has seven subdivisions, each which has its corresponding degree of materiality and its corresponding condition of matter." ⁶

Or as Blavatsky herself writes of this seven within seven structure of the planes:

"The One Kosmic Atom becomes seven atoms on the plane of matter...That same atom becomes seven rays on the plane of spirit..." ⁷

Annie Besant presents a more complex conception of the seven-fold subdivision of the planes:

"...the "atoms" of the Adi, or highest plane,...join together and make more complex combinations; and so on till six sub-planes below the atomic are formed. Now comes the forming of the atoms of the second plane...the atom of the first plane, is the spirit of the second plane...thus ensouled, are the atoms of Anupadaka, or second plane. By ever more complicated aggregations of these the remaining six sub-planes (of the Anupadaka plane) are brought into being."⁸

And so on for each of the five remaining planes, producing a total of 49 subdivisions within the seven planes. Now I have given these three quotes about the nature of the seven subdivisions of the seven planes because, from these descriptions we see another example of the operation of the Hermetic Axiom in occult thinking. In this case we see a repeating pattern of seven within seven within seven in these descriptions of the nature of the planes, what occultists call the "septenary arrangement" of the planes. Each plane is composed of seven sub-planes, and the seven planes of Nature taken together form the cosmic physical plane, this latter being one among seven of a vast cosmic set of planes. Again, this is a description of a self-similar pattern, which we may take to be a fractal in some sense, and this example illustrates how occultists use the Hermetic Axiom as an organizing principle identical to the concept of self-similarity found in fractal geometry.

Thus, not only is the physical plane fractal in nature (as described in section 3.2), but *all* of the planes are fractal in nature according to occult descriptions. Now there is a subtlety here that I must clarify. The physical world is fractal in the sense of being made up of many nested levels of organization or resolution. This is different than the Theosophical notion of the septenary arrangement of the planes. The septenary arrangement is a fractal pattern of seven within seven within seven--a fractal template, you might say. However, as we come to better understand the subjective nature of the planes through subsequent discussions, we will see that these planes are also fractal in the sense I described the physical plane as being made up of nested levels within levels of organization.

As well, Leadbeater's concept of the seven planes filling and interpenetrating space is identical to the notion of "superposition" used in physics. Superposition is a term used when discussing waves, and it means different waves can coexist within the same space. And this

concept begins to suggest to us the literal reality of the planes and how it is they are related to the three dimensional everyday world of our experience.

Also in these quotes we see much reference to the "matter" of the nonphysical planes. Now, what we normally think of as "matter" are, according to occult teachings, the three lowest subdivisions of the physical plane; solid, liquid and gas. But these are only three out of the seven sub-planes of the physical plane. According to Besant and Leadbeater there are four more types of physical matter, or subdivisions of the physical world. In occultism these four sub-planes of the physical world are called "etheric" matter and are not perceivable by our ordinary senses. As well, such a seven-fold arrangement of matter exists for each of the other planes.

Thus, we now have had our first taste of the occult notion of nonphysical matter. The seven planes of Nature, as envisioned in the occult are, in the most real sense, material. Such a notion challenges the everyday use of the word "matter", and it also challenges the scientific use of the word. Normally we associate the concepts of "physical" and "matter" (or "material"), but the occultist does not. A thing does not have to be physical to be material from the occult viewpoint⁹. We are now beginning to see examples of how subtle and abstract modern occult notions can be. Though the subtlety of the concept of nonphysical matter is not apparent at this point, it soon shall be because this concept is fundamental in the context of this book and will be explored extensively through many of the following discussions.

Now what is very interesting in the cosmology these authors present is that the planes beyond the physical correspond to *subjective aspects of human consciousness*. That is, the astral plane corresponds to the levels at which human emotions operate. The mental plane, as the name implies, corresponds to the level at which the mind operates. The fourth through seventh planes, according to these authors, correspond to subjective faculties that are latent at the present stage of human evolution, and thus are relatively meaningless in terms of our actual subjective experience. The following quote by Besant illustrates the manner in which these authors equate the planes with aspects of our subjectivity:

"One plane is called the plane made of `mind-stuff'...Another is called the plane of `desire-stuff'"¹⁰

"When we study consciousness working on the mental plane we see...choice...discrimination...cognition. On the astral plane we see...desire...love.. .sensation."¹¹

Yet what is even more fascinating about these authors' descriptions of the planes is that, though they correspond to subjective levels of human experience, the planes are in the most real sense objective worlds that exist independently of, though interpenetrate, the physical world. Leadbeater says this about the objectivity of the planes (again only referring to the astral plane, but this generalization holds for all the planes);

"The first point which it is necessary to make clear in describing this astral world is its absolute *reality*. In using this word I am not speaking from (a) metaphysical viewpoint...I am using the word in its plain everyday sense, and

I mean by it that the objects and inhabitants of the astral plane are real in exactly the same way as our own bodies, our furniture, our houses or monuments are real...They will no more endure forever than will objects on the physical plane, but they are nevertheless realities from our point of view while they last--realities which we cannot afford to ignore merely because the majority of mankind is as yet unconscious, or but vaguely conscious, of their existence." 12

That is to say, these planes provide the *objective medium* through which human subjective events occur. Before this statement can be made comprehensible, other facets of Besant and Leadbeater's cosmology must be defined. Through their ability to perceive the planes, they identified an occult anatomy possessed by human beings. They describe that humans possess "vehicles" which are nonphysical bodies that allow interaction with the various planes. As we have a physical body, or physical vehicle for our consciousness, which allows us to perceive and exist on the physical plane, we also possess an "astral body" that allows us to perceive and operate on the astral plane. Likewise we possess a "mental body" that allows us to perceive and operate on the mental plane. They also describe that the average human possesses a "buddhic body" for operation on the buddhic plane but that this body is highly undeveloped and thus mostly inoperative. These bodies are invisible unless one has awakened siddhis that reveal their existence. Nonetheless, whether we know it or not, these bodies exist and play fundamentally important roles in our normal everyday lives. Figure 6 shows a drawing which combines the astral and mental bodies.

These bodies function in such a way to convey impressions into our consciousness from the plane corresponding to the respective body. Thus, our physical body conveys into our consciousness physical sensations. And likewise our astral body conveys to us impressions from the astral plane and our mental body conveys to us impressions from the mental plane. But the astral plane is the world of emotion and the mental plane is the world of thought. So, according to Besant and Leadbeater, the impressions we receive from the astral plane are emotions, and the impressions we receive from the mental plane are thoughts. It is thus that our emotions and thoughts are actually objects that exist on the astral and mental planes, respectively. As I perceive, say, a tree or a building on the physical plane, knowing that the image in my consciousness is but a reflection of the real tree or building, according to Besant and Leadbeater, it is the same case with our emotions and thoughts. Thus, anger or joy are objects that exist on the astral plane (objects called "elementals" by Besant and Leadbeater), and one's astral body will sense these objects and convey into consciousness the image of anger or joy, which we then experience subjectively as the corresponding emotion. It is the same with thought. Thoughts exist as objects on the mental plane, and these objects Besant and Leadbeater called "thought-forms". Our mental body will sense the thought-forms and convey the impression or image of the thought-form into our consciousness which we then subjectively perceive as a thought in our mind. Again, the notions here are being introduced in a cursory fashion, but we shall return to these notions repeatedly for they are critical in understanding the compatibility of modern science and occultism.

This description of subjective events that Besant and Leadbeater present is most astounding. Effectively they have destroyed the dualism between objectivity and subjectivity.

What we perceive as a subjective event (i.e. a thought or an emotion) is in actuality an objective phenomena existing on another plane of Nature. In this sense everything is both objective and subjective simultaneously. Our perceptions, emotions and thoughts are objective in the sense that they correspond to actual material objects which exist on their respective planes. The materiality of these objects is nonphysical, but nonetheless, they are real and objective in their nonphysical spheres. These things are subjective in that they all are ultimately sensations or images within our consciousness. This is a topic that I dwell on in more detail in another chapter (see "Just What Do We Mean By A Science Of Psychology?") so this is all that will be said here.

Now, Besant and Leadbeater's cosmology may thus far seem complex but we have barely scratched the surface of it. There are many details I am leaving out here simply because this is not a book solely about these two authors, though their ideas play prominently in later chapters. In spite of this, there are a few more points I would like to discuss.

The description given above of the planes as corresponding to our subjective experience of emotion and thought is one in which they appear from the point of view of physical experience and perception. But it is also part of Besant and Leadbeater's world-view that one need not operate only from this point of view. That is, according to these authors, consciousness operates quite well in the other planes just as it does on the physical plane. One can move about the astral plane in one's astral body or move about and explore the mental plane in one's mental body. All that is necessary is knowing how to effectively transfer one's consciousness to these other bodies, such abilities being a sign of highly developed siddhis. This notion of operating in bodies other than the physical body provides the underlying rationale for many occult phenomena within these authors' world-view. Such occult phenomena include: the nature of psychic abilities, the nature of dreams, life after death, reincarnation, communication with discarnate entities, astral projection, and a whole host of other phenomena.

Normally, these ideas seem absurd within the context of modern thinking, and the nature of these types of occult phenomena is mostly misunderstood by both the general public and modern science. But from Besant and Leadbeater's point of view, these are very normal and rational occurrences. As a matter of fact, they claim that we humans spend the better part of our time as discarnate, or nonphysical beings, and that our sojourn here in physical life between birth and death is but a brief span compared to the overall life of our (for lack of a better word at this point) soul or consciousness. That is, when we die, according to Besant and Leadbeater, we simply lose our physical body, and thus, the ability to operate upon the physical plane. But we still possess our astral, mental and buddhic bodies (for durations that are proportional to the energy contained in these bodies upon the death of the physical body) and we dwell as conscious living beings upon these planes for some time after the death of our physical body. We spend the greater part of our time upon these planes until, for whatever reason, we incarnate as physical entities again. Here then is a part of the occult rationale for reincarnation.

Thus, to one with siddhis that are developed enough to perceive the astral and mental planes as the vast worlds, or dimensions of existence that they are, one sees not only the objects that correspond to our emotions and thoughts (elementals and thought-forms), but one sees as well the vast hosts of beings and inhabitants who occupy these nonphysical planes. Again, these authors spend many pages detailing these inhabitants, explaining the nature of ghosts and

discarnate humans as well as the creatures who are native to these planes. Examples of the latter are the Elementals, Devas and nature spirits of the astral plane. According to Annie Besant:

"Vast hierarchies of beings inhabit these planes, ranging from the lofty Intelligences of the spiritual region to the lowest sub-conscious Elementals of the physical world." 13

Elementals are essentially astral creatures, that according to Besant and Leadbeater, are something reminiscent of insects. They talk about how these creatures will flock and swarm around human beings, being drawn by the particular moods or emotions a human displays. Again, Annie Besant describes Elementals thus:

"The most salient characteristic of the kâmic (astral) Elementals is sensation, the power of not only answering to vibrations but of feeling them; and the psychic plane is crowded with these entities; of varying degrees of consciousness, who receive impacts of every kind and combine them into sensations. Any being who possesses, then, a body into which these Elementals are built, is capable of feeling, and the man feels through such a body." 14

Here is another description of Elementals presented by Annie Besant which incidentally describes thought-forms as well:

"A thought-form, is a mental image, created--or molded--by the mind out of the subtle matter of the (mental) plane. This form, composed of the rapidly vibrating forms of the matter of (the mental plane) sets up vibrations all around it...these vibrations thrill out as a singing-color in every direction, and call to the thought-form whence they proceed the Elementals belonging to that color... Elementals are addressed by colors, and that color-words are as intelligible to them as spoken words are to men...Men are continually talking in this color language quite unconsciously, and thus calling round them these swarms of Elementals, who take up their abodes in the various thought-forms..." 15

We will at a later point return to the notion of thought-forms in great detail (see Figures 6, 7 and 8 for representations of thought-forms), and as well attempt to assess the nature of this "color language" the Annie Besant is here describing.

As well as Elementals, the planes are populated by creatures that Besant and Leadbeater refer to as "Devas" and "nature spirits". These creatures are beings, sometimes less evolved than humans as in the case of nature spirits, and sometimes more evolved in the case of Devas. The primary function of Devas and nature spirits is to maintain the forms of Nature such as plants and trees, mountains, clouds, lakes and rivers and other wilderness settings. These creatures essentially take care of what we perceive as physical Nature. Nature spirits come in

all shapes and sizes and often resemble the fairy folk of Irish mythology. Due to their extreme sensitivity and tenuity, only the more base and crude of the nature spirits is able to be in the presence of man, owing to the generally coarse vibrations we emit on the astral and mental planes. Devas do not find the human realm hospitable either, and are rarely present in the planes associated with large human populations. Christian myths of angels stem from even earlier myths of semi-divine beings, the latter of which, according to Leadbeater, are faint mythological recollections of human contacts with Devas. Devas are described as radiant beings of great power and beauty.

And as well as these native inhabitants, there are also on the astral and mental planes vast companies of human beings. A very small fraction of these humans are dreamers who have temporarily left their physical body during sleep and are involved in activities on the planes. However, the vast majority are humans who do not have a physical body and are permanent inhabitants on the astral or mental planes (these are what are normally called "dead people"). According to Besant and Leadbeater (and other authors as well, notably Robert Monroe), there are many many, more humans on the nonphysical planes at any time than are on the physical plane. Given that there are 4 to 5 billion people on the physical plane presently, there must be uncountable hosts of "discarnate" humans on the nonphysical planes. Of these discarnate humans, only a very small proportion are even aware that there is such a thing as the physical world. Some on the other hand, mostly the recently dead, go about their business on the astral plane as if they were still on the physical plane not even realizing they are "dead"¹⁶.

Now, granted that we accept Besant and Leadbeater's contentions at face value, it is not too difficult to imagine what life must be like for a human living permanently on the other planes. That is because, according to these authors, we go there every night when we dream. Thus, the world of our dreams is where we shall go when we die and life there is as life is for us in our dreams, with all the strange occurrences we encounter in our dreams. In our dreams we can fly, breathe underwater, pass through walls or walk into the front door of our house yet mysteriously appear in a supermarket. We know that the dream world is not like the world of our physical experience, but we have all been there so we know what it is like. And, according to Besant and Leadbeater, this is what life is like for a discarnate human (i.e. a "dead" person). They are quite clear about this and often scoff at the ignorance of "modern" man with regard to the nature of physical death, and the experience of life after death.

As amazing and strange as Besant and Leadbeater's view of things seems, again, we have barely scratched the surface. These authors have described so many incredible things in their writings that it would be impossible to list them all here. One amazing thing they described was that they claimed they could clairvoyantly see physical atoms and molecules, and they wrote a book called *Occult Chemistry* detailing these observations. This is a very important topic within the scope of this book and *Occult Chemistry* will be described in a later section (6.2.4). As well, these authors claimed that with their siddhis they could see far into the past and describe in great detail the evolution of the universe, and of the solar system and the Earth. They also go into very great detail describing human occult anatomy in their works, especially Leadbeater's concepts of the chakras. This notion of chakras will be discussed further ahead so I will not dwell on it here. The point is that, as I said before, these two authors single handedly created a rich and extremely complex view of Humankind and Nature and the workings thereof.

At this point, the question is: What do we make of all of this? Are Besant and Leadbeater simply big story tellers with over-active imaginations? Is there any validity whatsoever to their claims?

For one thing, the vast bulk of this book is dedicated to interpreting the claims of Besant and Leadbeater from a scientific point of view. Surprisingly, many of their ideas are completely compatible with fundamental scientific concepts. These, as I pointed out in the previous chapter, are quantum theory, chaos theory, and fractal geometry. Later chapters are spent explaining these connections. I want to stress right here how amazing it is that quantum theory, chaos theory and fractal geometry are consistent with Besant and Leadbeater's view of occult realities because *these theories did not even exist when these authors wrote most of their material*. As I already stated, both fractals and chaos theory are only about 20 to 30 years old, and quantum theory was not formulated until 1925. Leadbeater wrote *The Astral Plane* in 1895, and the collaboration between Besant and Leadbeater also began in 1895. Thus, that they could foreshadow these sciences 50 years before they existed suggests that there may be a validity to their claims that is completely unexpected.

Also, however, as will be discussed in upcoming chapters, Besant and Leadbeater's ideas lay a strong foundation for parapsychology, psychology, and sociology. That is to say, when we review more closely some of their ideas about the occult nature of Humankind, and interpret these ideas in a scientific light, it will become apparent that these ideas very accurately describe human behavior and they do so in a way identical to how "hard" scientists describe the behavior of physical matter. At this point our main interest is to get a feel for contemporary, or "modern" occultism. As we review the next two authors, we will begin to develop a basis by which to compare the teachings of Besant and Leadbeater and how they fit into the arena of ideas that make up modern occultism.

Up to this point we have discussed what Besant and Leadbeater perceived using the siddhis they claimed to have developed by practicing yoga, but little has been said about the actual siddhis themselves. For in spite of the seemingly incredible claims these authors make, it must be realized that the total validity of their claims rests upon the reality of the siddhis. For if the siddhis are real, then that means that the claims of Besant and Leadbeater are truly open to scientific verification to anyone capable of also developing these siddhis. Besant and Leadbeater never asked anyone to *believe* what they claimed, and they did not simply put forth unsubstantiated dogmatic claims. Leadbeater always made very clear in his writings that anyone who took the time could learn to perceive for themselves the realities that he and Besant (and others as well) described. Thus the crucial questions are: Are the siddhis real? If so, then how does one develop them? Again, section two of this book is focused on answering these questions. At this point I shall leave the issue wide open and as well end the present discussion about Besant and Leadbeater. However, we will return to a consideration of these authors' works later. Let us now proceed to our next author.

5.2 Dane Rudhyar.



The next modern occultists we shall consider is Dane Rudhyar (1895-1985). Though generally not as well known as Besant and Leadbeater, Rudhyar's approach to occultism is no less important. Rudhyar's contributions to modernizing occultism are considerably more subtle than Besant and Leadbeater's. Rudhyar is popularly known for his reformulations and innovative approaches to astrology, "humanistic astrology" as he called it. However, Rudhyar's true contribution to the modernization of occultism lies primarily in his approach; he was truly a modern individual of the 20th century. Whereas Besant and Leadbeater were primarily Victorian in their values, Rudhyar was a product of the 20th century and it was through these eyes that he gave significance to occultism.

In 1917, French born Dane Rudhyar left Europe and came to America. He lived through and was affected by the great cultural changes that occurred throughout the 20th century. Influenced by the works of the likes of Stravinsky, Nietzsche, Debussy, Spengler and others, as well as two world wars and the psychedelic era of the 1960s, he operated within a very modern cultural mind-set. He contributed to the introduction of the semi-tone music of the East here in the West through his involvement in artistic circles as a composer. Through his artistic activities during the 1920s, he came eventually into contact with occult and theosophical circles, befriending such occultists as B.P. Wadia and Alice Baily. Through their influences, and coupled with his own intuitive sense of the meaning of the revolutionary historical changes of the 20th century, Rudhyar began to develop an approach to occultism that is highly relevant and specific for the Western mind of today.

In some respects the difference between Rudhyar's approach to occultism on the one hand, and the Theosophy of Besant and Leadbeater on the other hand, is the difference between Western and Eastern approaches to the occult. Besant and Leadbeater leaned more toward the Eastern ways with their emphasis on altered states of perception. Rudhyar in his writings speaks little of altered states of consciousness and other worlds. Instead, Rudhyar's recognized contribution in occultism is with astrology, a system of symbols to which he gave unique and highly substantial interpretations. As discussed above, this symbolic approach is more characteristic of Western occultism.

However, Rudhyar's primary contribution to the modernization of occultism was in his attitude towards occult concepts. He was both a philosopher and occultist, but primarily a philosopher. The culminating philosophy of his life, which he called the philosophy of "Operative Wholeness", gives to occultism a modern sense found nowhere else in contemporary

occultism. Though Rudhyar did not stress occult practices leading to altered states of consciousness, it was one of his primary concerns to unify, not occult practices of East and West, but the Eastern and Western *attitudes* towards life in general. Rudhyar's approach combines the subjective oriented approach of the East with the objective oriented approach of the West leading to a highly intuitive, yet highly rational and sober approach to human events. Like Carl Jung, it was Rudhyar's main intention to see people become healthy and integrated individuals. Also it is through Rudhyar's philosophical approach to occult concepts that he foreshadowed many concepts that are becomingly increasingly important in modern science. I will now go into the specifics of Rudhyar's approach.

There are two primary insights that thread through all of Rudhyar's writings. These are:

- "1. Time is cyclic, and the Law of Cycles controls all civilizations as well as all existence.
2. The Western civilization is coming to what could be symbolically called the autumn phase of its period of existence.¹⁷"

Let us address point number one. This concept of the cyclicness of Nature is fundamental in occult teachings and is intimately related to the concept of Karma. The idea is present in Blavatsky's works and is also taught by Besant and Leadbeater, and is found in all occult teachings in some form or another. The particular fashion that Rudhyar expressed this notion is in conceptualizing the nature of our experience and the world to be a series of cycles within cycles within cycles. Undergoing these cycles are existential "wholes". Here is how Rudhyar defines these "wholes":

"When a definable or identifiable boundary can be given to an energy field in which the activities of a number of elements are functionally interrelated, this field constitutes a "whole". The wholeness of this whole results from the coexistence of a state of multiplicity (the many elements the field encompasses) and a state of unity (the fact that these elements are circumscribed by boundaries). Any boundary defined field of interrelated activities is thus a particular manifestation of wholeness, regardless of how few or many the number of its constituent elements and how limited or extensive its defining boundaries. Boundaries separate a whole from other wholes, *yet all of these wholes may in turn be seen as parts of a greater whole.*"¹⁸ (italics mine).

Again we encounter fractal notions in occult thinking. Like Leadbeater's description of the planes, Rudhyar is here defining a situation of "wholes within wholes within wholes"; the nesting of different levels of resolution, a fractal-like organization. Again, this fractalization of concepts in occult thinking stems from the ubiquity of the Hermetic Axiom in occultism. Rudhyar referred to this pattern of "wholes within wholes within wholes" by the term "holarchic", and with this concept he was attempting to define and give meaning to the *interrelationships* that exist amongst the myriad levels we encounter in our existence. He referred to this concept as a "holistic" form of conceptualization which he contrasted to the "atomistic" or reductionistic mentality that has characterized the traditionally Western approach to understanding.

The Law of Cycles, the second axiom of Rudhyar's thought, is introduced as follows:

"Wholeness is Dynamic because it implies motion. Moreover, it seems justifiable to give a rhythmic, thus cyclic and repetitive character to this motion. It has structure--using the word "structure" in its most abstract sense."¹⁹

What Rudhyar appears to be saying in these quotes is that "wholes" are not disorganized conglomerations in any sense. The wholes operate and are structured in a cyclic sense. Elsewhere he states this ideas thus:

"This multilevel reality pervades the whole of space and it is active throughout infinite duration. It operates cyclically, because it is dual or bipolar in nature, and what we call and experience as existence results from the unceasing interplay of two cosmic forces--an interplay that produces a rhythmic sequence of cosmic manifestations in limited space-time fields of activity..."²⁰

When we apply what Rudhyar is saying about the cyclic nature of experience to real life examples, his meaning becomes perfectly clear. Take the fact that the Sun revolves on its axis as well as tracing out a path around the galaxy, as does the Earth about the Sun, and the Moon about the Earth; the systems of outer space form a very definite system of cyclically changing "wholes". But cyclic patterns of wholeness operate as well on and in the Earth. Seasons repeat in a periodic fashion. Biological life proceeds under the influence of circadian rhythms and the life-cycles of organisms. As well, the psychological and social events of our lives proceed in a cyclic fashion. We ourselves alternate between periods of sleep and wakefulness. The stock market rises and falls. Trends and fashions periodically resurface. All of these are examples of wholes undergoing cyclic (or in scientific terms, periodic) behavior.

At this point we can begin to see how Rudhyar's ideas correspond to modern scientific concepts. Rudhyar's notion of "wholes within wholes" is identical to the idea of a fractal, in the sense of patterns of self-similarity recursed (repeated) within nested levels of resolution. His concept of "cyclicness" corresponds to the idea of periodic attractors in chaos theory. The terms may be different between Rudhyar's occult description and the scientific nomenclature, but the meaning of the concepts is the same. However, Rudhyar's formulation of these concepts is considerably more encompassing than the current scientific notions in that Rudhyar saw this pattern of cyclically nested levels of organization to be an *all-inclusive frame of reference* by which to organize the reality of our experience. Modern science has simply not yet taken these ideas to this logical extreme.

A study of Rudhyar's ideas illustrates vividly how scientific and occult concepts are completely compatible. This discussion also illustrates how occultists have foreshadowed scientific developments. It is unlikely that Rudhyar even knew of fractals and chaos theory, much less that he chose not to mention them in his writings. Yet the similarity of his description to fractals and chaos theory is no coincidence, and we will go into this similarity much deeper below. No, the fundamental explanation for the similarity of these concepts is that occultism embraces the same explanations as science. This is support for my claim that both occultism

and science (in sense one of the word) are both scientific activities (in sense two of the word). Both study Nature, so it is only predictable that both will discover the same organizing principles in Nature. What is ironic is that occultists have known these principles all along, because of the ubiquity of the Hermetic Axiom in occult thinking, but science has only recently acknowledged these principles and then only to a very partial degree relative to the occultists.

Rudhyar's ideas of cyclicity can be thought of as embracing a type of "cosmic ecology". For he sees all things within human experience as contained within vast terrestrial, solar and galactic cycles. Yet he takes these notions to the most abstract extreme in his reformulation of astrology. For here he defines astrology as the symbolic study of the behavior of cycles within cycles within cycles, the "algebra of life" as he calls it. This is a very subtle and sophisticated notion far outside the bounds of modern science. Rudhyar was hardly naive in his approach to astrology. The popular social *misconception* is that astrology claims that the stars and planets somehow mysteriously affect human events. This is a simple-minded idea that is not even a part of the astrological frame of thought. The general conception in astrology is that the patterns formed by the planets and the stars symbolically reflect the patterns found in human events. This again is an example of "as above so below", and from the fractal point of view is a very subtle and abstract way to apply the concept of self-similarity. Rudhyar's contribution to the modernization of astrology was to display this principle in a highly sophisticated and rational formulation of traditional principles in astrology.

Self-similarity, if you recall, means that the same pattern repeats at different scales or levels of resolution. The pattern that Rudhyar envisions as repeating at the scales of planets and stars on one hand, and human events on the other hand, is the abstract laws of cyclicity. This is the basis of Rudhyar's reformulation of astrology and he describes these laws of cyclicity in his Magnum Opus *The Astrology Of Personality*. This is what Rudhyar himself says about applying the laws of cyclicity to the symbolism of astrology, and how this creates an "algebra of life":

"If now, we come back to our definition of astrology as the algebra of life, we shall make our meaning plainer by stating that astrology is to all the empirical sciences dealing with the formation, growth, behavior and disintegration of organic wholes what mathematics is to physics and in general to sciences of inanimate objects. We do not say that it is recognized as such but that such is its true function. And this to some extent is a verifiable statement²¹.

Astrology of itself has no more meaning than algebra. It measures relationships between symbols whose concreteness is entirely a matter of convention, and does not really enter into the problems involved--just as the symbols of algebra are mere conventions...The revolutions of celestial bodies constitute in their totality a vast and complex symbol which, of itself, is made up solely of *cyclically changing patterns of relationship*...In other words, the astrological realm of moving celestial bodies is like the realm of logical propositions. Neither one nor the other has any real content. Both are purely formal, symbolical, and conventional. They acquire real value only in function of the actual living experience they serve to correlate.

Alone, astrology and mathematics are without substance. But they invest with coherence, pattern, logic and order whatever substantial reality is associated with them. Thus mathematics associated with physical experimentation produces modern physics. In a similar manner (yet obviously not identical) astrology can and probably should be associated with physiology, geology, medicine, history, sociology; and above all, with psychology."²²

Again, Rudhyar is saying something here that is far outside the scope of modern science. He is *not* saying that the realm of moving celestial bodies, as studied by astrology, affects the Earth. In his writings he acknowledges the fact that the greater solar and galactic environments do exert energies that affect the Earth and biosphere, and the study of such factors and their effects upon the Earth he calls "cosmoecology", which is already a burgeoning science called exo-biology. Rudhyar clearly distinguishes astrology as he sees it from "cosmoecology".

Rudhyar, as is clear from the quote above, envisions astrology to be a symbolical means, based upon the changing celestial patterns in the sky, by which to interpret the cyclic phenomena we observe about us in our real life. To Rudhyar, astrology is a symbol system like mathematics, and it gains no meaning unless it is applied to real life events. And then, in that case, as he says, astrology, like mathematics, provides an organizing framework for real life events. In this sense, Rudhyar's concept of astrology makes astrology an actual form of mathematics, if we define mathematics to be the study of abstract symbol systems.

Yet there is a crucial and very subtle distinction between mathematics and the astrology that Rudhyar envisions. That is that the symbol systems of mathematics are purely arbitrary, and dependent only upon the human imagination whereas the symbol system of astrology is not. The symbolic content of Rudhyar's astrology is directly dependent on the relative relationships amongst celestial bodies, and this in itself is a real life phenomena, an empirical reality, and is not a simple product of human imagination. Thus, what Rudhyar has done is to envision a system of abstract logic that is grounded in real life events.

The implications of Rudhyar's conception of astrology take us directly into the heart of some of the deepest controversies and unresolved issues in modern science. One of these issues is the very nature of mathematics itself. It is not known why mathematics, being only a product of the human imagination, works like it does in describing the behavior of real life events²³.

A second controversy involved here is the very nature of time, history and irreversibility. These three concepts to this day plague modern science and make a contradiction of the fundamental assumptions of the most important theories in modern science. For the mathematics behind both quantum theory and the theory of relativity view the world as being reversible in time²⁴, though we know directly from our experience that time *never* goes backwards. The only "hard" science that addresses the issue of irreversibility is the science of thermodynamics and the concept of entropy. But it is not understood how thermodynamics is related to quantum theory and relativity (see note 23).

As far as the issue of history goes, this is really the main distinction between the "hard" and "soft" sciences. In the "hard" sciences, it is not necessary to understand an object's real life history to understand the object's behavior. The "history" of the supposedly inanimate objects

studied by the "hard" sciences are not real life histories, but are mathematical histories, as for example the path within which a pendulum swings, or the path followed by a baseball in the air. These mathematical histories are based on what scientists call "time independent" equations and give the same answer whether the variable of time is going forward or going backward. On the other hand, the objects studied in the "soft" sciences are utterly dependent upon the object's real life history; biological evolution, ecology, anthropology, psychology and sociology.

There is much discussion and debate as to whether or not it even makes sense to develop an abstract model or theory of the objects studied in the "soft" sciences, such as the evolution of life, or of how societies operate, or how personalities develop, because these are all phenomena that have real life histories. How can we make up a general theory of how life evolves when we only know of one example, that of life on this planet? Or how can we make up a general theory of personality development when each of us develops according to the exact history of our experience? Or how can we construct a general theory of social systems, when the actual study of such systems is really the study of human history? This is a problem that has long plagued the philosophers of history and now the same problem today plagues modern science. These are issues that expose the true *impotency* of modern science when it comes to describing the real world of our experience.

Probably at this point it would be appropriate to discuss how Rudhyar's notions fit into this intellectual mess. His statement from the quote above provides the key to this connection: "... astrology can and probably should be associated with physiology, geology, medicine, history, sociology; and above all, with psychology."

This statement is what makes Rudhyar's views pertinent to the issues and difficulties in modern science with regard to time, history and irreversibility.

Rudhyar's ideas point to the solution to these difficulties; instead of simply making up arbitrary systems of logic like the ones that are the foundation for our present sciences, let us create systems of logic that reflect events in the real world of experience. We thus come to operate under a "self-similarity of Nature" principle in science that has essentially the same meaning as the Hermetic Axiom does in the occult.

But are the mathematical systems used by science really completely arbitrary? That mathematics *does* work at describing events in the real world would suggest that it is not simply an arbitrary product of the human imagination. It is likely that mathematics works at describing events in the real world because the concepts embodied in mathematics are a reflection of the organizing principles inherent in the mind (not the brain, which is only a sub-set of the mind). If this is true, then such organizing principles also operate on other levels in Nature, as is attested by the fact that mathematics is applicable to Nature. So it would appear that, in this respect, science since Newton has quite instinctively and subconsciously been operating under a "self-similarity of Nature" principle all along.

This all points to one of the biggest and most profound distinctions between science and occultism, which is that occultists see themselves as a part of Nature, whereas scientists have traditionally tried to describe Nature from the outside, so to speak. Rudhyar's entire approach points to a meeting ground where science and occultism bleed imperceptibly into one another and lead to the creation of an altogether new intellectual and intuitive approach to the study of Nature. This is a living and dynamic *participatory* approach in which Nature and the human

mind are seen to be mutual and ever evolving reflections of one another. This approach would be grounded in the self-similarity of mind and Nature, or, since the mind is a product of Nature to begin with, we can come to realize that Nature itself is self-similar at its various levels.

There are already indications that modern science is beginning to appreciate the need for such an approach to the study of the phenomenon of Nature. Fractal geometry itself, through introducing the abstract concept of self-similarity, provides a means by which the relationship between all of the levels of Nature may be understood. And the pains felt in modern science with regard to the irreversibility of time were, and are, the true impetus behind the development of chaos theory with its ability to describe situations that accurately reflect what we see in real life around us. And what is most amazing of all is that an occultist, Dane Rudhyar, foreshadowed, if not actually laid the appropriate philosophical basis for this necessary approach to the study of Nature. Like we saw with van der Leeuw in chapter 2, since Rudhyar was not caught up in the myriad distinctions of the contemporary intellect, but instead approached these issues from an occult point of view, he was readily able to penetrate through to significant and straight answers, and express them in a fashion much clearer than is found in legitimate academic circles.

As we can see from the above discussion, Rudhyar's contributions to modernizing occultism and the relevance of this to modern science are indeed very subtle and complex. Unlike Besant and Leadbeater, Rudhyar does not even deal with issues that one would think of as occult. Rudhyar instead discusses the nature of time, and the organizing principles found within the phenomena and systems seen in the real world of everyday events. He utilized notions that are very common in occultism, that is, the cyclic nature of existence (i.e. karma) and the Hermetic Axiom, to explain the behavior of Nature. He found it most convenient to use astrological symbolism to express the behaviors of Nature, because of the renewed popularity of astrology throughout the twentieth century. However, he turned to astrology mainly because it is a symbol system intimately grounded in describing the behavior of cycles, a fact completely unrecognized outside of occult circles. Unbeknownst to Rudhyar, his ideas actually provide a means to resolve some of the most crippling issues facing modern science. We will return at length to these issues and to this principle of the self-similarity of Nature in the chapter "A New Concept Of Motion". At this point we will end our discussion of Dane Rudhyar's contributions to the rationalization of occultism and turn to our final modern occult author.

5.3 Seth.

The final modern occult author we shall discuss is in a class much different than the previous authors. Whereas Annie Besant, C.W. Leadbeater, and Dane Rudhyar were all real people who walked the Earth during this the twentieth century, the same cannot be said for our final author. This last author we are to discuss is not a human being at all but, as this author described, is an "energy personality" who exists outside of the bounds of physical space and time. This entity refers to itself as "Seth", though claiming to have other names and identities as well.

Seth is a nonphysical entity who, by means we shall discuss momentarily, conveyed ideas of an occult nature into our world of physical existence.

The Seth material was produced by writer Jane Roberts and her artist husband Robert Butts, a couple who lived in Elmira, New York. Jane Roberts passed away in 1984, but her husband Robert has survived her and is still alive today. The Seth material had its origins in unusual psychic events that began to occur with Jane Roberts in the early sixties. What was discovered by this couple eventually is that these unusual psychic occurrences were the foreshadowing of Seth attempting to communicate with our world via Jane's consciousness. Jane herself described the situation as such:

"You could say, if you wanted to, that Seth intruded himself from some unconscious dimension into my conscious life...As far as I know, Seth has no imprisoning body. He projects part of his consciousness, at least at times, into mine...I have been speaking for Seth in twice-weekly sessions since late 1963...The relationship between Seth and myself snaps into focus by prearranged appointments, as suggested by him in the early days of the sessions. Each Monday and Wednesday at 9:00 P.M., I sit in my favorite rocker. Rob sits across from me on the couch with his note pad and pen, ready to take notes. Normal lights are lit. I may feel very unpsychic, or even cross. I may feel tired, or really want to go dancing. Yet at nine, the session begins, and Seth "comes alive"

I don't "become" Seth. Instead, I seem to bask in what he is, or in his presence, if you prefer. Sometimes I am distantly aware that my facial muscles are being rearranged as they mirror Seth's emotions rather than mine. But then, for me, the reality of the room vanishes. Though my eyes are wide open, it is Seth who looks out and smiles at Rob; Seth who speaks through my lips, discussing the nature of reality and existence from the viewpoint of someone not confined to the three dimensional world."²⁵

This is Jane's first hand account of Seth speaking through her consciousness. In modern New Age terms, this is a phenomena known as "channeling" and in the past century this phenomena was known as "mediumship" and practiced under candle-light at seances. This phenomena of channeling is the process by which a disembodied spirit speaks through the body of the channeler or medium. Leadbeater himself describes the nature of this process in detail, considering it a very crude and low-level type of psychic event and actually warns against it as being detrimental to the medium's health. Leadbeater claims that in the majority of valid cases of channeling that what is actually occurring is the displacement of the medium's consciousness from the physical body and its replacement with the consciousness of a disembodied being, usually a being of a crude and unrefined type. However, in the case of Seth this part about crude and unrefined is untrue. As is evidenced by the writings that Seth dictated to Jane's husband Robert, Seth is hardly a crude and unrefined spirit. The case of Seth channeling through Jane Roberts is a definite exception to Leadbeater's rule of thumb that channeled spirits were usually not what they appeared. We must remember that Leadbeater was addressing the

popular spiritualism of his day and was likely addressing valid situations at that time. Leadbeater's analysis of the actual channeling process in terms of the mechanisms by which Seth entered Jane's body is probably valid. However, in the case of Seth, it is apparent from the Seth material that we are dealing with a highly refined emotional and intellectual personality in Seth.

Another unique facet of the Seth material that sets it apart from equivalent types of material in the occult literature is Jane and Robert's attitude about the situation. Initially neither one had anything to do with occultism and when these events began, they had no idea what was occurring. Both possessed a healthy skepticism initially that only relaxed as the situation with Seth became valid in their eyes. And once they were comfortable with the act of Seth channeling through Jane, they came to possess a very casual and matter-of-fact attitude about the situation. Seth became part of their family, so to speak. And during the sessions Seth, using Jane's body, would both smoke cigarettes and drink wine. Seth himself in his personality was both very profound yet eminently relaxed and also had a great sense of humor. Often Seth would ask Robert if he wanted to rest his hand, as it was that Robert copied by hand verbatim everything Seth said. And it was under such conditions that the Seth material--seven books in total--was produced.

The Seth material encompassed over nine hundred individual sessions from late 1963 through 1982. And in these nine hundred and some odd sessions, Seth presents a view of human existence and of life in general that is perhaps the most spectacular and profound in all of the occult literature. Seth discussed such topics as the nature of the Psyche, probable realities, space and time, the planes as "climates of value fulfillment", evolution as the actuality of possibilities of consciousness, his concepts of atoms and subatomic particles, the origin of the physical world, the means by which he communicated with our particular dimensions of existence, the fundamental role played by belief and intention in human existence, the nature of mass human events, the subtle roles played by occult realities in our day to day lives, the consciousness of other species of life, and the list goes on and on.

All and all, Seth created and presented a paradigm of occultism that outstrips any other in majesty, scale, and its overall relevance to our day to day lives. Seth was (and I'm sure he still is, wherever and when-ever he happens to be right now!) a personality of the most sparkling vitality and exuberance, and he made very clear the overall joyous intent that dwells in every conceivable facet of life. He was profound and cosmic, yet down to Earth at the same time, and the qualities displayed in the writings he dictated make it hard not to believe that this material did indeed come from a superior consciousness from another dimension of actuality.

Perhaps there is an alternative explanation to the Seth material. Maybe Jane Roberts and Robert Butts were delusional or even neurotic. Maybe Seth was simply a figment of Jane's imagination, or some facet of her subconsciousness. Perhaps some other equivalent interpretation exists, and the situation of Seth as a being from another level of existence communicating through Jane via some type of mediumistic response was wrong. All I can say is that Jane and Robert themselves considered such possibilities and dismissed them on grounds that they freely discuss in the Seth books. Jane and Robert's ultimate response to this situation was that they were involved in some type of definitely positive and constructive creative activity in producing the Seth material, and that the validity of the material speaks for itself. And indeed

this is true. One cannot read the Seth material and not walk away from it with a broader, more profound, and overall more joyous outlook on life. Seth's words themselves possess a high degree of therapeutic value. I will not even pretend to convey this element of Seth's writing here, all I can do is refer the interested reader to the material.

My intention here is to lay out certain aspects of ideas that Seth presented as clear cut examples of highly modern approaches to occult realities, and to show that Seth, via Jane Roberts and Robert Butts, has contributed enormously to making the occult a most rational intellectual endeavor. And as well, we will continue to discuss the relevance of modern occultism to science.

It is difficult figuring out where to begin discussing Seth's ideas. The material itself appears highly fragmented and unorganized in terms of the arrangement of topics. Yet under this apparent disarray of the Seth material there lingers a vast sense of order and organization. It is the difference between the seemingly complex, yet beautiful and simple pattern of a tree or the pattern of a library card catalogue. The Seth material is like the tree. There is also a hauntingly familiar sense of timelessness about the Seth material. Seth presents many discussions explaining that time as we know it, and space as well, have validity only within the narrow ranges of our perception and experience. And, Seth explains, our ability to perceive the nature of space and time are further narrowed by our beliefs as to what space and time are. Let us look at some examples of Seth's thinking which will illustrate these points.

Seth takes many traditional occult notions, such as the planes, or reincarnation, and expands their definitions to such a new and broad level to as completely shatter the traditional concept and replace it with an altogether new one. Let us take for example Seth's notion of the planes. Relative to Seth, Besant and Leadbeater's view of the nature of the planes could be considered "traditional" (even though we are still discussing "modern" occultism here!). Besant and Leadbeater, as we saw, taught that the planes formed a fractal-like arrangement of seven within seven within seven, and that these planes were mostly nonphysical. There are two angles from which Seth completely supersedes this notion.

The first angle by which Seth upsets Besant and Leadbeater's definition of the planes is in terms of how many there are and how they are arranged. Seth does not deny that planes exist. On the contrary he teaches that there are infinities within infinities of planes of existence, myriads and myriads of overlapping dimensions of actuality all intermingled and interbleeding with each other, each affecting all the infinite others in a constant give and take of the most subtlest of proportions. Seth describes that there are planes that are probable realities of this plane; all the "What ifs?" of existence in our world. All these worlds of "What if?": what if I had been born a girl instead of a boy?, what if Hitler had won W.W.II?, what if the Earth did not exist, and any other "what if..?" that you can imagine; to Seth these are literally real dimensions of existence, different levels, or plateaus of space and time. Seth speaks of these "Realms of Probabilities" as being as real in their own terms as our world is real in its own terms. Seth speaks of both "vertical" and "horizontal" arrangements to the planes. The "horizontal" arrangements are the unending fan of probable times and spaces. The "vertical" arrangements are the dimensions that our world both contains nested inside of it and those that enfold our level of existence. That is, Seth is using the idea of "vertical" to describe the dimensions of existence nested within our own dimension. These "vertical" and "horizontal" planes constantly interact

with each other in the subtlest and most obvious ways. To try to superimpose a template of "seven within seven within seven" over what Seth describes is impossible. Besant and Leadbeater's notion of the organization of the planes is like " $1+1=2$ ", and Seth's notion of the planes is like an advanced treatise on calculus in comparison. Thus, from Seth's vantage point, there are an infinity of planes that overlap with and interbleed into our physical plane, and they literally have *no* fixed geometrical arrangement relative to one another. In Seth's teachings, *all* is dependent upon one's point of view.

Now, from a scientific point of view, Seth's concept of the planes as presented so far is very interesting. The notions Seth is presenting are not completely unknown to modern science. There is a particular interpretation of quantum mechanics known as the "Many Worlds" interpretation of quantum theory that was put forth by Hugh Everett ²⁶. The idea of a Many Worlds interpretation in quantum theory comes about because of the use of probability theory in the mathematics of quantum theory.

In quantum theory, quantum physicists can only predict a result with a given degree of probability, they cannot make exact predictions. The way that quantum theory works in an experimental context is that, before an actual measurement is made (of say, the energy of an electron) any number of answers is possible. Each answer has associated with it a probability of occurrence; perhaps answer A has a 10% probability, answer B a 25% probability, answer C a 2% probability, and so on. Well, when an actual measurement is made, then one of the probable answers becomes 100%, and all the rest of the answers now have 0% probability in the system being measured. This measurement process is known as "the collapsing of the wave function" to quantum physicists. Now the philosophical issue is raised asking, what happened to all of the other probable states of the system? Did they just disappear? As far as most physicists are concerned, yes, all of the other probabilities just disappeared. The common view in quantum physics (the Copenhagen interpretation of Neils Bohr) is that quantum theory is simply a mathematical formalism and can not be taken too literally in some regards, and this is one of those regards. Even though the mathematics of quantum theory predict a number of possible states of the system, in the actual measurement of real life events, only one state is possible and so that is obviously the state that the system was in, and it is meaningless to discuss "what if it was one of the other possibilities?"

Again, Bohr's is the common view held in quantum theory, but to some this is not an aesthetically pleasing answer. Some physicists have suggested that perhaps one should take literally all of the probable states of a system as predicted by quantum theory. One suggestion put forth was Everett's Many Worlds model. What Everett is saying in this model is that *every* probable outcome of an event in Nature is realized, and the way that this is accomplished is that, every time a situation comes up in which more than one outcome is possible, then the universe branches into as many universes as necessary so that all possibilities can be realized. If (for simplicity's sake) there are two possible outcomes, then two new universes form, and each possibility manifests in its respective universe. What this means in real life terms is that, if you decided to go right at an intersection, then a new universe would form and branch away from our own, and in this new universe, you would go left instead of right.

To most physicists such notions are usually considered only fanciful speculation. How could one ever *prove* that the universe split? For this, and for other more technical reasons, the

Many Worlds view is not taken very seriously. But, within Seth's context of the planes as I've described it so far, our universe is indeed nested inside a branching universe of probabilities, one among "many worlds", each one a probable version of the others. Except in Seth's picture, it is a relative issue if anything is actually branching or not. Over and over again, Seth stresses the simultaneity of time, that all time is a simultaneous event. Thus to Seth, all the probable realities exist side by side. But, perhaps from our vantage point in time and space as we know it, it may appear that something is branching in time.

These details are not as important as realizing that Seth's view of probable realities is almost identical to the Many Worlds view of quantum physics. Again, we have scientists and occultists saying essentially the same thing about Nature.

Also, I'll briefly point out here that Seth's notion of the simultaneity of time and space is identical to how Einstein's Theory of Relativity describes time and space. In the context of Relativity, all times in the history of the universe occur as simultaneous cross sections in a four dimensional manifold of space-time. Seth presents an equivalent, though much more complex, picture of the relationship(s) between space and time. Again, scientists and occultists are seeing Nature in very similar terms.

It is interesting to note that neither of these examples is directly related to Karma or the Hermetic Axiom as have been our previous examples illustrating similarities between scientific and occult concepts. Seth introduces ideas into occultism that have no precedence in traditional occultism. That is to say, Seth's ideas are very modern.

Now the major difference between Seth's occult view of space, time and probable realities and the scientific view of these is that they are *literally real* to Seth, whereas they are mostly just imaginative constructs to scientists. Scientists may perhaps find indirect ways of confirming the structure of space-time or the nature of probable outcomes. Scientists may find speculations such as Everett's to be entertaining, but they rarely ever conceive of their everyday lives in the terms of the theories they practice and teach. To Seth, however, these are direct and immediate realities, almost matter of fact things from his vantage point. Seth claims that we move in and out of probable realities in our dreams, where we can test future circumstances to help us determine how we shall act in our waking life. And the circumstances of our waking life are themselves the result of the intersection of many probable realities, which we are free to move in and out of to some extent through our actions and beliefs.

Again we are seeing here the difference pointed out above between scientific and occult views; to the occultist, what is taught is thought of in a participatory fashion and applied to circumstances in our everyday lives, but what the scientist teaches is abstracted from the world of everyday life, as if the scientist's ideas have validity only in the laboratory but no longer are applicable when home at the dinner table.

In regard to occultists relating their ideas to our everyday life, we can see that Besant and Leadbeater's notion of the planes and Seth's notions of the planes are complimentary. Because these authors teach different ways to see the planes does not mean that one is right and the other is wrong. Both are right, and both are describing different facets of the same thing. Most importantly, each has something relevant to say about our everyday lives. With regard to the notions of the planes, Besant and Leadbeater show how the planes are related to our subjective experience of thinking and feeling and thus give us a greater degree of control over

these, and Seth shows how the planes relate and encompass the possibilities of our being. Now I said above that Seth's view of the planes supersedes Besant and Leadbeater's view. Seth actually expands their notion, encompasses it, and in doing so gives new meaning to the concepts put forth by Besant and Leadbeater.

Now there is more to Seth's view of the planes that sets him apart from Besant and Leadbeater, and this is the second factor I mentioned above. I would now like to discuss this because it is a very novel concept that not only expands our view of what "planes of existence" are, but helps us to understand Seth's overall intentions better.

Seth, in his dictations, comes to define a plane as a "climate of value fulfillment". It took me some time to figure out what he meant by this, and I have come to realize that this is an extremely sophisticated, unique and insightful notion. The whole issue of "value fulfillment" is probably *the* fundamental theme of all of Seth's material. This is Jane Robert's description of what Seth means by "value fulfillment":

"Seth uses the term "value fulfillment",...to imply life's greater values and characteristics--that is, we are alive not only to continue, to insure life's existence, but to add to the very quality of life itself.

We do not just receive the torch of life and pass it on as one Olympic runner does to another, but we each add to that living torch or flame a power, a meaning, a quality that is uniquely our own... Whenever that flame shows signs of dimming, of losing rather than gaining potential energy and desire, then danger signals appear everywhere. They show up as wars and social disorders on national scales, and as household crises, as illness, as calamities on personal levels as well."²⁷

Seth himself says this about value fulfillment:

"...All species are motivated by what I call *value fulfillment*, in which each seeks to enhance the quality of life for itself and for all other species at the same time. This further unites all species in a cooperative venture that has remained largely invisible because of beliefs projected outward upon the world by both your sciences and religions, generally speaking"²⁸

Both of these quotes define generally what Seth means by value fulfillment as well as illustrating the fashion in which Seth explains how belief affects our experience. The theme of belief and experience will play heavily in the final section of the book. At this point let us analyze Seth's notion of the planes as "climates of value fulfillment".

As we can see from the quotes, and is plain throughout all of Seth's material, Seth is saying that value fulfillment is the primary impetus behind life itself. Life is pure purpose in Seth's view, and it is not an arbitrary purpose, nor is it a purpose limited only to human intentions. All of life itself strives towards a constant betterment of itself, and the totality of this process is far beyond human comprehension, though every fabric of our being is involved in this process. Value fulfillment can be thought of as the joyful creative intent behind all of Nature and

existence. This is the one overriding purpose behind all of the myriad forms of existence at every level and in every conceivable (and, I will add, inconceivable) dimension of actuality. In actual practice, the process of value fulfillment expresses itself in a myriad of diverse forms, schemes and aspects. According to Seth, *a plane of existence is that which binds together those attempting to express the generally same approach to value fulfillment.*

Here we have an incredibly novel view of what a plane is. There is no mention of physical or nonphysical, no mention of arbitrary frameworks of geometrical organization. What Seth is saying is that a plane is that which binds together those sharing a common purpose or intent. This definition has vast implications in terms of how an occultist can potentially depict the organization of Nature. The implication here is that Nature is not organized in any fundamental sense by any principle that is abstract and unrelated to values and intention. On the contrary, the fundamental organizing principle behind Nature is *intention*. This view is so far beyond the scope of both modern science and modern occultism that we will not return to it until the final section of the book.

As well, this definition sheds a completely new light on how we can conceptualize the relationship between the myriad forms of our physical experience. Thus, mineral, vegetable, animal, man, planet and galaxy; the basic elements of our physical plane, somehow or another are all involved in some great cooperative venture. There is no hint of such a notion of the planes in most mainstream occult thought. As a contribution to modern occult thought, Seth's notion of planes as climates of value fulfillment gives a sense of the purposeful arrangement of the planes, instead of them being seen as simply some type of arbitrary arrangement, be it geometrical or otherwise. It will probably take some time for this notion to filter in and have a substantial impact on occult thought.

Now I would point out that there are very similar notions to Seth's concept of value fulfillment in the occult. The occult concept of "dharma" is in many respects identical to this notion. All ideas of occult evolution are related to Seth's notion of value fulfillment as well. Dane Rudhyar also spoke much about these types of issues. However, no author is as clear as Seth on this topic. Rudhyar masked his concepts in the terms of the astrological symbolism (he saw the astrological birthchart as a symbol of one's dharma). The more traditional concepts of occult evolution and dharma seem to imply that eventually there will be something akin to value fulfillment at the end of a long and arduous path (over long ages of time). Seth's view is unique in that, again, *he is saying the value fulfillment is right here and right now*, that it is the fabric of all of existence. Seth eliminates the need for intermediary symbol systems of any nature in regard to value fulfillment and puts this in the context of our real and immediate experience. This is why Seth's approach is completely unique in modern occultism.

I would now like to discuss a second example of how Seth expands upon occult concepts by discussing the Sethian concept of reincarnation. This is a notion that is simply not accepted in our culture, though it was commonly accepted in other cultures. Today, the whole issue of death and the possibility of life after death is not even considered a legitimate issue. Nonetheless, it is a common concept in occultism. Generally speaking, reincarnation is a necessary corollary to the Law of Karma, as Annie Besant makes clear in her book *Karma*.

The fundamental assumption in occultism behind the idea of reincarnation is that our consciousness survives the death of the physical body. To the occultist this is not an assumption

but an observable fact to those who can observe events on the nonphysical planes. I discussed above, in the section about Besant and Leadbeater, how these authors claim that our consciousness functions effectively on the nonphysical planes, whether or not it is associated with a physical body. Again, this is the basis for the rationale of life after death in occultism. Physical death is simply the death of the physical body, but the consciousness continues. The details of the after death experience are too involved to go into here, but the bottom line to the idea of reincarnation as embodied by occult teachings leads us into occult concepts of evolution.

Occultists, like scientists, teach about the process of evolution, but that is where the similarity ends, for the occult concept of evolution is vastly broader than the scientific concept. Scientists use the concept of evolution in many contexts; the evolution of stars, biological evolution, the evolution of the universe, the evolution of the chemical elements. When scientists use the term evolution, they are referring to the evolution of purely physical phenomena. An occultist, however, speaks of the evolution of the soul. To an occultists, physical evolution is but the backdrop, the stage or setting upon which occurs the evolution of the soul.

Furthermore, occultists do not simply speak of evolution, but of a two stage process of involution and evolution. Both Besant and Leadbeater, as well as Dane Rudhyar speak much of this involutionary/evolutionary cycle of existence. This is a very involved topic, especially in the Theosophical scheme, but the basic outline of the process is as follows: All of existence is defined by the polarity of spirit and matter. Spirit precipitates or descends into and as matter, and this is the process of involution; spirit becoming matter. And then matter once formed seeks to return to spirit, or sublimate itself back into spirit, and this is the occult process of evolution. Thus involution leads ultimately to the creation of the physical world through the progressive complexification of form created by spirit's descent into matter. And once spirit has reached a certain critical degree of consciousness within the framework of material existence, it then begins the conscious climb back into states of subjective spirituality, this being the process of evolution to the occultist.

These are notions that modern science has only touched on in the most speculative and imprecise of ways. What modern science calls "evolution", occultists call "involution", albeit minus the spiritual connotations of the occultist. Modern science has no counterpart to the occult concept of evolution. Some evolutionary biologists have expressed notions akin to the occult concept of evolution, most notably Teilhard de Chardin, Erich Jantsch, C.H. Waddington, and others from these authors' school of thought²⁹. However, the scientific view does not clearly distinguish between involutionary and evolutionary processes as does the occultist's. This is because scientists refuse to operate from any basis implying the reality of spiritual matters.

This digression on the occult view of the involution/evolutionary process has been necessary so that we can put the concept of reincarnation in its proper occult perspective. For it is the view of the occultist that spirit is immortal, and that this spirit is our very consciousness itself. Thus, it is our consciousness, our spirit, that is the permanent entity involved in reincarnation (This is not the consciousness of our physical personality though. How our physical personality relates to our permanently reincarnating consciousness is discussed in the section "What Is Ego?").

Theosophy teaches that our consciousness has passed through the long ages of the involutionary process through all of the increasingly complex grades of material organization; first as minerals, then as vegetables, then as animals, and finally now we are human beings. This ascent of spirit is evolution, and the necessary process by which occult evolution is effected is reincarnation. And it is our fate, if you will, according to occultists, to continue this upward progression, to continue to expand our consciousness, our spirit, to levels of being far beyond that of humanness. This is essentially the idea taught by Besant, Leadbeater and Rudhyar, and is an idea ubiquitous to all occultism.

To finally return to Seth's notion of reincarnation, what we must realize about the occult view presented above is that it is conceptualized in terms of space and time as we understand it presently. So reincarnation is thought of in terms of "past-lives" and the "future lives" that we have before us. However, we have already spoken about the fact that Seth (like Einstein) teaches that all of time is simultaneous. Thus, in Seth's view, *there are no past or future lives, they all exist right now*. What this means is that our ultimate existence as conscious beings is independent of time and space, as well as having other implications.

To distinguish clearly Seth's ideas on reincarnation from the standard occult view, we must define more of Seth's concepts. As Seth is fond of saying, we possess a "spiritual biology" and a "biological spirituality". What this means is that we have a spiritual anatomy, and this is to be distinguished from Leadbeater's occult anatomy spoken of above. Our spiritual anatomy, according to Seth, involves vast and subtle psychological interconnections on the inner planes between our normal waking consciousness and the consciousness of what Seth calls our "counterparts". These counterparts are other versions of ourselves from probable realities. And these inner psychological connections form what Seth calls "families of consciousness". According to Seth, each of us belongs to a vast psychological gestalt or organism of interconnections of consciousness. And this organism spans vast infinities of dimensions of time, space and existence. As a matter of fact, this was what Seth claimed his connection was with Jane Roberts. They were both members of the same family of consciousness.

With all of this strange information in mind, we are now in a position to understand Seth's view of reincarnation. To Seth, reincarnation has nothing to do with time, nor space, and it is a process of a vast psychological organism entering into or forming a myriad of interconnections of consciousness in an infinity of times and spaces. I think of this process as something like a tree opening its leaves in the springtime. The tree is the vast psychological organism of which each of us is but one leaf. And each leaf opens as an individual human life into a different space and a different time. Thus, all of the reincarnating selves come into and leave manifested existence in a process somewhat analogous to a tree opening its leaves in the spring and then shedding them in the autumn.

The practical implication of Seth's view of reincarnation is that we are intimately connected with our "past lives" and "future lives" right here and right now. According to Seth, we communicate in very subtle ways with these other lives at every moment of our existence. And each of these lives supports all of the others in terms of value fulfillment, just as each leaf contributes to the overall life of the tree.

Now this view is in contrast to the more standard view of reincarnation. The standard view alienates one from "past lives" and "future lives" by separating these from one another in

time. And the standard view does not explain readily the experience of becoming aware of one's other incarnations. Seth's view solves both of these problems by explaining that all of our incarnations are interconnected in a vast web of consciousness that is beyond the bounds of space and time. And it is through this gestalt web-work that awareness of other lives occurs. And there is no alienation, because all incarnations are intimately bound now, and at all points in time.

I think it should be apparent from these two examples of Seth's redefinition of the occult concepts of planes and reincarnation, that I have not underestimated him by saying that he operates on a scope that is vast and unprecedented. If we take the Seth situation at face value then it is apparent even from the little I have described here that Seth was indeed a being from some level of existence that far exceeds our own, and had a bird's eye-view of our human existence that we simply cannot relate to in any fashion, even from the clairvoyant vantage point of Besant and Leadbeater. Yet in spite of this vast broadness of Seth's teachings, he constantly relates these to facets of our everyday lives and experience. Seth's abstractions always somehow resolve themselves back to the subtle and unexplained occurrences of our lives. Seth does not alienate us from our experience, but unifies our experience and our sense of belonging to the vaster processes of Nature which enfold us.

Also, I think this section on the Seth material has illustrated an important factor about discussions that include both science and occultism. Not only does modern occultism embrace science, but it leaves it far behind in the dust when it comes to rationalizing and abstracting human experience. Science is normally thought of as intellectually difficult, but it is simple in comparison to the mind-stretching capabilities of occult thought. Most occult concepts have no counterpart in science, yet occultists are usually capable of addressing and accepting anything a scientist can present. This is a little appreciated fact and I hope that the above discussions make this point clear.

And, as I keep stressing, the occult always relates to our everyday lives. Even though occult abstractions are usually much vaster than those of modern science, they are always related to the world of everyday life; our dreams, strange occurrences like *deja vu*, our thoughts and emotions. The particle tracks of the scientist's bubble chambers, the quarks and black holes of science possess little of this quality of relating to our everyday lives. The occult is a rationalization of our everyday experience in such fashion so as to allow us as individuals to lead a healthier, more integrated and harmonious life. Science presents us with some interesting and perhaps dramatic pictures of Nature, but is usually mute when it comes to making us better people. So even though science and occultism are compatible when it comes to describing Nature, there are important ways in which they differ and this is probably the most important. This difference will be discussed at great length elsewhere.

To summarize this section about modern occult authors, it has been my intent here to show that twentieth century occultism does operate from a highly rational basis. Though the occult ideas I have discussed above are very far-out and seem to contradict many mainstream beliefs, I hope to have shown, at least to some extent, that occult thinking and world-views possess their own type of internal logical consistency. In terms of the validity of these ideas, I have pointed out that the essential crux of this matter rests with the validity of the psychic

abilities or siddhis that occultists claim can be developed. This issue of psychic abilities will be discussed at length in section two.

I also have attempted to introduce the reader to the fundamental compatibility of scientific and occult notions, particularly with regard to fractal geometry, quantum theory and chaos theory. As we have already seen, the relationship between scientific and occult notions is not simple. Not only are we looking at two different technical and highly complex languages for describing Nature, but as well, occultism and science diverge on fundamental philosophical issues. Again, going deeper into these issues will be the subject of section two.

Notes: Chapter 5

¹Tillet, (1982).

²Leadbeater's biography is presented in the previous footnote. For biographies of other relevant individuals see: For H.P. Blavatsky; Neff, (1971) and Meade, (1980). For Annie Besant; Besant, (1893) and Dinnage, (1986). For J. Krishnamurti see; Lutyens, (1975).

³Leadbeater, (1984) page vii.

⁴Ibid., page 5.

⁵Leadbeater, (1980), page 8-9.

⁶Leadbeater, (1984), page 15.

⁷Blavatsky, (1928), page 696.

⁸Besant, (1980), page 17.

⁹To an occultist, the word "matter" is etymologically related to the word "mater" meaning "mother". That is, matter, whether physical or nonphysical, is viewed as the female polarity that gets impregnated by the male polarity of "spirit".

¹⁰Besant, (1980), page 23.

¹¹Ibid., page 44.

¹²Leadbeater, (1984), pages 3-4.

¹³Besant, (1918), page 10.

¹⁴Ibid., page 11.

¹⁵Ibid., pages 13-15.

¹⁶The most incredible description I have ever read of discarnate humans is in Monroe, (1985).

¹⁷Shere, (1972).

¹⁸Rudhyar, (1986), page 7.

¹⁹Ibid., page 8.

²⁰Rudhyar, (1975a), pages 15 - 16.

²¹Speaking on the verifiability of astrological predictions is a subtle issue. First it depends on how well the astrologer understands astrology to begin with (and therefore the quality of the predictions made), and secondly, and more importantly, it depends on the nature of the prediction. Astrology, by its very nature cannot make the kind of *detailed* predictions that scientists make. Astrology's predictive value (which Rudhyar argues is *not* a main function of astrology) rests in outlining broad trends. To this end Rudhyar predicted in 1975, but also mentions even as early as the 1930s (in *Astrology Of Personality*) that: "It is probable that...around 1989-91, when a massing of six planets repeatedly occurs in the sign of Capricorn...world events of major importance will take place; but the level at which they may occur cannot be safely determined..."

This is from Rudhyar, (1975b), page 256. Looking at these years, we witnessed the fall of the Berlin Wall and the decline of power of the Communist governments in both the U.S.S.R. and in Eastern Europe. Obviously these were "world events of major importance". Unfortunately, Rudhyar did not live to see his very accurate prediction borne out. However, this illustrates that there is indeed a subtle and profound logic that underlies astrology, particularly as Rudhyar taught it, a logic that proves its own validity. Those who criticize astrology obviously do not understand it. It was, as a matter of fact, this particular example that made me curious enough to actually study and learn astrology. I do not know it well enough to confidently practice it, but I do understand its logic well enough to know that it is a highly valid and imminently useful system of thought.

²²Rudhyar, (1970), pages 48-49.

²³For a discussion which reveals the essentially mysterious nature of the application of mathematics to real life events, see Kline, (1980).

²⁴A popular discussion of the status of time and irreversibility in modern physics can be found in Prigogine and Stengers, (1984). A more technical discussion can be found in Prigogine, (1980).

²⁵Roberts, (1989), pages 4-6.

²⁶DeWitt and Graham, (1973).

²⁷Roberts, (1986), 20-21.

²⁸Ibid., page 115.

²⁹This school of thought is exemplified by works such as Jantsch and Waddington (1976).

Chapter 6. Science Meets Occultism:

Scientific Authors Who Have Utilized Modern Occultism

Before I end our survey of occultism, I would like to discuss one last major topic of relevance. This is the fact that, not only have occultists been involved in rationalizing modern occultism, but some scientists have as well. I would like to discuss some examples of how scientists have utilized occult concepts and techniques as a basis for their research.

Before we get into how scientists have utilized occult ideas as a basis for their research, we need to first digress on the science of parapsychology, since one normally thinks of parapsychology in connection with occult and paranormal occurrences. Since we are nearing the end of our survey of occultism, I feel it is necessary to present a discussion of parapsychology and its relevance towards occultism, and towards a synthesis of science and occultism as I am presenting it here. Traditionally, parapsychology has done its best to ignore occult thought.

Parapsychology has its roots in the Western approach to "psychical research" that has accumulated over the past 150-200 years. The birth of modern parapsychology can be seen in the work of J.B. Rhine conducted in the 1930s at Duke University. Parapsychology is supposedly the science that studies psychic phenomena. Yet it has always been a troubled science, having no real legitimacy in the scientific world. And even though the subject matter of parapsychology is the subject matter of occultism, parapsychologists have always maintained a distancing attitude towards occultism. The following quote by a parapsychologist shows the common distaste in this field towards occultism:

"No self-respecting student or professor would care to be seen browsing among 'Occult Books'."¹

Obviously this author has never read a valid occult book. So what is the situation with parapsychology? I spent some time studying the literature of parapsychology and this is my feeling on the matter. Reviewing the parapsychological literature, what I saw were reports of attempts to measure and quantify something called "psi-powers". Nowhere have I ever seen a definition of psi, and it appears to be a catch-all term meant to imply any type of unusual psychological circumstance or event. There is no overall classification scheme apparent in parapsychology, nor are there any standard definitions of what are "usual" verses "unusual" psychological events.

If we look closely at the Western approach to "psychical research" as it is embodied in the parapsychology, what we find is primarily a preoccupation with trying to prove the reality of "psychic phenomena". Parapsychology is mostly the documentation of seemingly unusual "psychic events" such as out-of-body experiences, near-death experiences, cases of precognition, telepathy, psychokinesis, and other such phenomena, or it is the application of

mostly inappropriate statistical methods aimed at trying to statistically demonstrate the occurrence of so-called "psi phenomena".

Modern parapsychology is a kind of tragedy-comedy within the context of modern science. The preoccupation of parapsychology with trying to prove that psychic phenomena are real is an almost absurd gesture in the face of a modern technological world that does not legitimately accept the existence of psychic phenomena to begin with. Parapsychology is indeed the struggle for social acceptance and recognition in the face of the doubt and hostility of the rest of modern science².

Whereas occultism unquestionably accepts the existence of psychic phenomena and takes these as an axiom of its logic and paradigms, parapsychology does not. Parapsychology is too busy trying to prove that psychic events are real to build on the implications of their existence as occultism has done. Now what is interesting is that, even though parapsychologists are generally hostile to the occult, most likely an occultist would be very sympathetic to the plight of the parapsychologist. The occultist understands not only the validity of the phenomena that parapsychology seeks to understand, but also understands the nature and mechanisms of this phenomena.

I have already dealt at some length with occult explanations of psychic abilities in the section on Besant and Leadbeater, and below (and in section two of the book) we will go even deeper into these occult theories (or paradigms) of the operation of psychic abilities. The point is that occultists know intimately that psychic events involve nonphysical realities and they have constructed many (equivalent) paradigms of the nonphysical realities (these are the planes as we have already discussed). Parapsychologists have never seen this relation between "paranormal" events and nonphysical realities clearly. Only recently has there been a groping towards occult levels of understanding in parapsychology as illustrated by the following quote by Lawrence LeShan, a prominent parapsychologist:

*"The great error of parapsychology has been to try to solve its problems as if they were physical problems from the sensory realm"*³.

A large part of the problem in parapsychology is related to the present condition of the "soft" sciences. As I have explained, there are no unified (or mature) paradigms in normal psychology or sociology. Therefore, parapsychology has no firm foundation on which to build. Thus, not only are there today a tremendous variety of competing paradigms in psychology, but in parapsychology as well, and all of these paradigms are basically unrelated to each other. This situation is further complicated by the fact that, as I have stated, the "soft" sciences in general are unrelated to the "hard" science. Thus, parapsychologists will attempt often to turn to modern physical theories, such as quantum mechanics, for explanations of "psi" phenomena. Such gestures only further muddle the situation because, as it is rare to find "hard" scientists doing parapsychology, most parapsychologists have their training in the "soft" sciences. Thus, the parapsychologist's understanding of modern physical theory is mostly second hand, and often grounded in rather scientifically unimportant philosophical generalizations. This point is discussed further ahead both in the chapters "What's In A Name?" and "The Psychological Value Of Quantum Theory", but I will give an example here as well.

It has become fashionable recently for parapsychologists to turn to the non-locality debates in modern physics as explanations of the seeming space independence of "psi" phenomena such as telepathy or psychometry, for example. The nonlocality debates in modern physics have to do with the "communication" of quantum particles, and this is the famous Einstein-Podolsky-Rosen (EPR) argument⁴. The basic gist of this argument involves what seem to be contradictory predictions made by Einstein's theory of relativity and quantum theory. Relativity predicts that all *physical* (note that I have emphasized this word) communication is limited by the speed of light. However, due to the presence of certain conservation laws used in quantum theory, for example, the conservation of a quantum property known as "spin" (which is a measure of a particle's rotation about its own axis in an applied magnetic field), certain cases arise in quantum theory in which it appears that particles will "communicate" faster than what is limited by the speed of light. That is, if two particles, for example, a proton and anti-proton, are created *de novo*, then they will move away from each other in opposite directions and with opposite spins. Now, if we reorient the spin of one of the particles (which means we flip the direction in which it is spinning), then the second particle will flip its spin as well, and it will appear to do so instantaneously. Experiments have been performed that, though not conclusive, highly suggest that the quantum predictions are correct⁵. This means that in some cases, physical particles will behave in a fashion in which it appears that they have "communicated" in a space and time independent fashion.

Thus, some parapsychologists have taken this for the *modus operandi* of "psi" phenomena⁶. That is, since some particles seem to "communicate" outside the bounds of space-time as defined by Einstein, then events like telepathy must occur in a similar fashion. But such an interpretation is grounded in philosophical interpretations many steps removed from the actual and literal experimental context of the EPR debate. Philosophers and philosophically inclined scientist have jumped on the non-locality experiments to create a new metaphysics of how the world operates, and it is this philosophical level of thinking to which parapsychologists have turned.

Yet from a scientific point of view, these philosophical positions are tenuous at best, and have little credence in an experimental context. Here is what one experimental physicist says about the present status of the EPR debate:

"...there is a peaceful coexistence between quantum mechanics and relativity theory, in spite of quantum-mechanical nonlocality. For this reason it would be misleading (and wrong) to say that nonlocality in the quantum mechanical sense is a reversion to action at a distance, as in the prerelativistic gravitational theory of Newton. It is tempting to characterize quantum-mechanical nonlocality as "passion at a distance," not with any pretense to provide an explanation for the strange correlations, but only to emphasize that the correlations cannot be exploited to exert a controlled influence more rapidly than a light signal can be sent."⁷

From a technical point of view, and in spite of any philosophizing, the present consensus in the physics community with regard to the EPR situation is that, even though the non-locality

experiments are valid, there appears to be no fundamental contradiction between relativity and quantum mechanics. This is because one cannot use non-local quantum phenomena as the basis for a faster-than-light code⁸. Thus, the non-locality of quantum phenomena cannot be used as a basis for *meaningful* faster than light communication.

Thus, from the point of view of modern physics, "psi" phenomena, if explained as some type of quantum nonlocality effect, is just as impossible as it has ever been. There is no question that "psi" events such as telepathy or precognition are meaningful transfers of "information", at least in some context. And if these phenomena are taken to be some type of meaningful communication occurring faster than the speed of light, then they cannot be grounded in physical processes, because physical processes cannot "communicate" meaningfully at velocities faster than light.

Again, it is important to point out that such terms as "communication" are purely philosophical. They have little meaning in the context of the physics experiments we are discussing. In terms of the physics, the issue is conservation of quantum properties having no literal counterpart in our psychological experience (such as spin or angular momentum, for example), and the interpretation of statistical results that are only meaningful within the literal mathematical framework of the quantum theories and their relationship to the experimental devices used by physicists. To attempt to relate these particular issues to processes of human psychology is simply wrong.

I will argue in later discussions that we can interpret occult claims in a *metaphorical* fashion using different ideas from quantum theory (not the ideas particular to the non-locality debates, but more general concepts used in quantum theory) as a means to explain not only "psi" phenomena, but "normal" psychological and sociological processes as well. But we shall see that this is an entirely different approach than that used by contemporary parapsychologists. Thus, the bottom line to this example is that it illustrates modern parapsychology's inability to successfully explain "psi" phenomena in terms of modern physics.

The type of thinking found in parapsychology, as illustrated above, leads me to believe that parapsychology is not a science, not in the sense physics is or in the sense that occultism is (as was discussed in chapter 4). Parapsychology is only an imitator of the real sciences, having all of the forms thereof, but none of the substance. There is an American Parapsychological Association, A Journal of Parapsychology; all of the dressings that one finds in modern science. But there are no paradigms, there are no testable (i.e. falsifiable) hypothesis (and how can there be if parapsychologists are too busy trying to demonstrate the existence of that which they would use to build hypotheses?), there is no definite subject matter, nor any relation to the other sciences; parapsychology exists in a scientific vacuum. Thus there is no Doctorate of Philosophy in parapsychology, and there are no Departments of Theoretical And Applied Parapsychology in the universities. So it seems that the scientific world itself recognizes that parapsychology is not really a science.

The reader will remember that I began this survey of occultism with a discussion of the social misconceptions that abound as to what the occult is. And the reader will also recall that I have spoken of the myth making power of modern science, and the incredible social legitimacy given to scientific pronouncements. I feel that parapsychology is the product of these two factors. Parapsychology is not a science, it is an attitude. It is an attitude that is caught up in the

social myth of science, but has no real understanding of either the philosophy or methods behind science. And it is an attitude that rejects occultism, not because it understands occultism and offers a superior vantage point, but because it is caught up in the social misconceptions of occultism. The result is an activity that resembles science on the surface, but has no substance in any real scientific terms. As such there is simply no way that the parapsychological program will ever get anywhere.

This is truly an unfortunate situation. It is apparent that parapsychologists are very sincere in their desires to understand "psi" phenomena. What they don't understand is that "psi" phenomena *is* occult phenomena, and by rejecting occultism, they have cut themselves off from the true science of the phenomena they purport to study. And as well, they have only further served to alienate occultism from science by being such a poor example of science themselves.

Thus, to summarize this discussion, in a sense, parapsychologists are trying to "re-invent the wheel" with their orientation towards "psi" phenomena. From the occult point of view, such phenomena have been known and recorded for thousands of years, and very logical and useful explanations of these phenomena exist in the occult literature. There is simply no need for parapsychology in light of occult teachings.

For now, this is all I want to say about parapsychology, but the problems they have created in giving legitimacy to occultism will be mentioned in the chapter "What's In A Name?".

Now, the type of literature I am going to discuss below distinguishes itself sharply from parapsychology in that these are scientists who *accept* occult concepts and are using them as a basis for their research. This literature forms an interesting borderland between science and occultism in that each bleeds imperceptibly into the other, and it becomes very difficult to distinguish occultism from science. Though today this is a small body of literature, it is fascinating to explore, for here both scientific and occult concepts are used and interchanged freely. Now some of the authors I discuss below refer to themselves as "parapsychologists" yet I prefer to reserve this word for the meaning I have given to it above, as scientists who are generally antithetical to occult teachings. I do not want to get into semantic arguments in this book.

Yet, in the examples discussed below, what we will see are scientists applying scientific tools and concepts towards the vindication and analysis of occult phenomena. That is, this literature has an uneven quality about it. It reflects not so much the equal mixing of science and occultism but more the engulfing of science by occultism, the recognition that science is beginning to catch up to occultism.

This is not surprising in light of the material we have discussed so far about occultism. We have already seen how the occult world-views are much broader, and more inclusive than scientific views. As well, occult views, as we have seen, are much more complex and subtle than much of modern science, dealing as they do with the subtle and complex processes of human perception, emotions, and thought, as well as the subtle workings of the many levels of Nature. These are the factors drawing scientists to the occult; for the occult offers a comprehensive and unified view of Humankind, Nature and the relationship thereof. These are things that simply cannot be found in the fractured world of modern academic science. This is why parapsychology has been doomed from the beginning, because science will not explain occultism, as parapsychologists seem to have supposed. Instead, occultism will engulf science,

and each will transform the other, resulting in a hybrid knowledge more powerful than either alone.

What science offers occultism is primarily a cloak of social legitimacy. Utilizing scientific terms makes occultism a more socially accepted activity because, as we have also seen, science is the accepted, though generally unacknowledged, myth maker of our culture. However, we cannot get lost in the delusion that we have "improved" occult ideas by integrating them with science. It is a process of building bridges that we are discussing here. But probably most important from the purely intellectual view, redefining occultism in scientific terms offers occultism the precision that is characteristic of the scientific method (which Leadbeater recognized, see the quote on page 56), and would allow the application of the great reservoir of scientific knowledge and experience to help further characterize and clarify the nature of occult realities. Again, the end of such a fusion would be a hybrid knowledge superior to either a nonprecise occultism or a secular and materialistic science. The examples below are a foreshadowing of this development.

What we are faced with here is a very interesting transformation in the overall paradigms of our Western culture, a continuation of the transformations I mentioned in the first chapter; science will redefine occultism, and occultism will redefine science, and in doing so produce a hybrid that is superior to either. This process is only beginning slowly today against the weight of hundreds of years of prejudice and misconception. As this process continues it promises to produce transformations in the nature and quality of human life that will dwarf even the vast changes that have been experienced throughout the twentieth century. As we review the following authors, and subsequently throughout this book, we will get a feel for the directions in which these transformations are going.

6.1 Chakra Research

As our first example of scientists utilizing occult concepts as the basis of their research, we are going to discuss examples of those who are utilizing the occult notion of the chakras. What I shall do first is define the notion of the chakras in the context of occult anatomy, then, with this basis, we will survey two examples of the researches being performed in order to rationalize the concept of the chakras in more scientific terms.

So then, what are chakras? The idea of the chakras is a very ancient concept deriving from ancient India. The word "chakra" itself is Sanskrit and means "wheel". There are frequent references to the chakras in Sanskrit literature, including some of the minor Upanishads, the Puranas, and especially in Tantric literature (circa 900-1300 A.D.)⁹. The introduction of the chakras into modern Western occultism is attributed to Leadbeater, though other Western authors discussed them as well. Like always though, it was Leadbeater who very concisely and literally described the chakras, without resorting to unnecessary mystique or symbolism. He taught that the chakras are one of the fundamental components of our occult anatomy and that their function involves the absorption, circulation and distribution of the various types of nonphysical energies throughout the nonphysical bodies.

I have already spoken of the nonphysical bodies that are perceivable by the clairvoyant. According to clairvoyant reports, some of the obvious features present in the nonphysical bodies are spinning, saucer-like depressions. These are the chakras. There are normally seven of these seen running along a line that corresponds to the spine of the physical body. The placement of the chakras along this line is seen to correspond to the major nerve plexuses found in the physical body. Figure 1 shows a picture of the chakras and their location relative to the central nervous system. They are described as having a vortex-like structure and a petal-like appearance. Each has a different appearance from the others in terms of color, rate of motion, and the number of "petals". It is commonly taught that there are seven major chakras and a few minor ones. Figure 2 illustrates the petal-like appearance of the chakras.

I must stress that this is the common view of the chakra system. There are other views of the chakras as well which debate their location, number, relation to the physical body and other factors. Such details are beyond the scope of the present discussion but the interested reader is referred to the writings of Manly Hall for further information¹⁰. In spite of these different schemes, there is unquestioned agreement in the occult that chakras are real.

The names and associated physical locations of the seven most commonly described chakras are:

Hindu name	Common name	Location
1. Muladhara	Root chakra	Base of spine
2. Svadhishtana	Spleen chakra	Spleen
3. Manipura	Navel chakra	Solar Plexus
4. Anahata	Heart chakra	Heart
5. Vishuddi	Throat chakra	Larynx
6. Ajña	Third-eye chakra	Between Eyebrows
7. Sahasrara	Crown chakra	Top of Head

According to occult theory, each of these chakras plays vital functional roles in our physical body and in our normal subjective consciousness. The chakras are the means by which the functions of the all of the vehicles, including our physical body, are carried out. The actual functions and attributes of the chakras with regard to our physical body comprise an involved topic. Many complex claims are put forth by occultists in this regard. There is generally an overlapping and sharing of functions amongst chakras. Also, the occult description of the functions of the chakras is not simply physiological, but psychological as well. Thus, when discussing the chakras' functions we are relating physiological functions with psychological behaviors.

Generally speaking however, it is my understanding that the three lower chakras (lower starting at the root chakra and going up the spine) have a larger physiological component to their function, and the four higher chakras are more obviously related to our psychological makeup. Strictly this is not true, but roughly speaking this is a fair simplification.

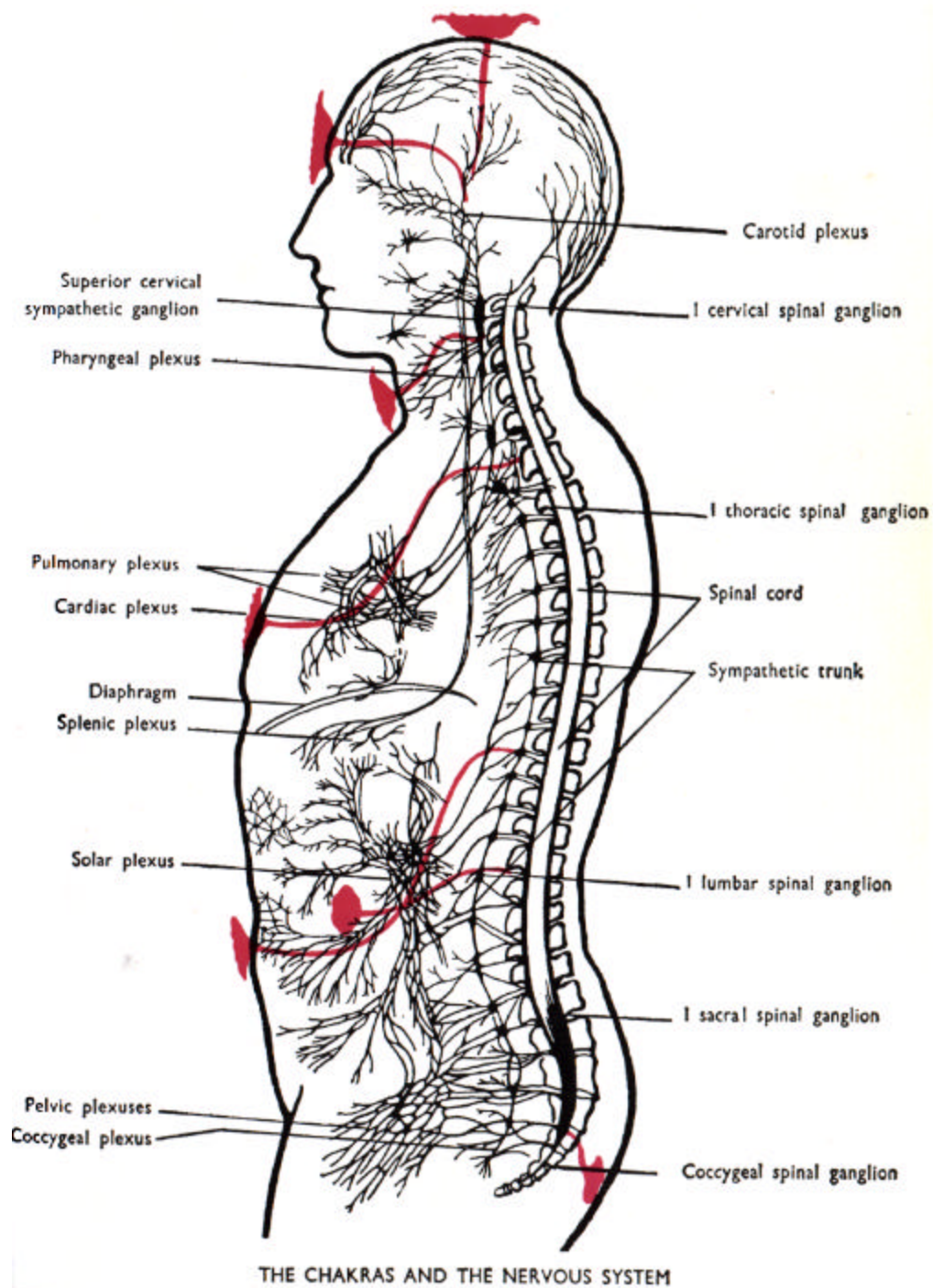


Figure 1: The chakras and their locations relative to the central nervous system. From Leadbeater (1985).

The physiological roles of the chakras are roughly as follows. The root and spleen chakras are related to generative and sexual functions. The navel chakra is related to digestion. The heart chakra is related to the heart and circulation, and the throat chakra is related to the

lungs and the voice, including the ears, nose, and throat. The third eye chakra is related to vision, the eyes, and the pituitary gland. The crown chakra is related to the brain, and especially the pituitary and pineal glands.

In terms of psychological functions, the three lower chakras are related to our raw emotions and biological instincts ranging from sexual desire and hunger, into passion, anger, pleasure and joy and other relatively simple emotional states. The four higher chakras are related to higher cognitive states. Thus the heart chakra is related to empathy and understanding. The throat is related to vocal expression, hearing, and the ability to communicate. The third eye chakra is related to discriminative cognition and the ability to understand. And the crown chakra is also related to understanding and comprehension, but as well serves as an integrative factor, and is thus related to the gestalt nature of the mind.

We can see, even from such a brief description, that the notion of the chakras actually defines a sophisticated means of classifying human physiological and psychological functions into one integrated framework. This is a highly integrated approach and has no counterpart in modern science. In modern science the study of physiology, emotions and cognition are all relatively separate disciplines. In terms we have already discussed, physiology, for example, is generally thought of as a "hard" science, but the study of mind and emotions in modern psychology are generally thought of as "soft" sciences. Modern science recognizes that physiological factors affect psychological behavior and vice versa (as with the effects of drugs on behavior, for example), but it has no clear framework within which to conceptualize this mutual interaction. In other words, *modern science has no clear means of understanding the relationship between mind and body, but occultism does and this is embodied in the concepts of occult anatomy and especially in the notion of the chakras.* Recognizing this difference between science and occultism will prove critical in later chapters.

Above and beyond the ability of occult theory to view our normal physiological and psychological behavior in a unified fashion, this theory also provides the rationale for psychic abilities. *It is by enhancing the activity of one's chakras that one develops psychic abilities or siddhis.* The changes in occult anatomy by which this is accomplished is as follows. Again, this will only be a rough sketch of occult teachings because the actual range of psychic abilities (siddhis) is very broad and complicated, and the processes involved are also complicated.

The lowest chakra reserves a special function housing an energy occultists call "Kundalini". It is through the use of the Kundalini energy that the chakras get enhanced in their activity. The enhanced activity of a chakra is called the "awakening" of that chakra by occultists and is supposedly accompanied by a flaring up of the color of the chakra and a large increase in its speed and energy processing capabilities. And as well, awakening a chakra confers psychic abilities or siddhis. How the awakening of the chakras is effected in actual practice is through certain yoga exercises, though spontaneous occurrences are known. It is also known that certain drugs will stimulate the chakras. This latter point will play a critical role later in the book as we go deeper into a scientific understanding of occultism.

Now, the psychic abilities that are associated with the chakras are roughly as follows. The awakening of the lower three chakras is associated by occultists with what they call "psychism", which is considered to be a relatively crude exercise of psychic abilities. This

includes mediumship, the ability to dream (dreaming being considered by occultists as a crude form of out-of-body travel), and the occurrence of sporadic psychic abilities such as the type studied by parapsychologists (isolated cases of telepathy or precognition, for example). The awakening of the four higher chakras produces what occultists consider legitimate psychic abilities, and what is implied by this is the conscious use and control of these abilities. These are the siddhis described in occult literature, and these are often possessed by those who have studied and practiced yoga to a great extent. The awakening of the heart chakra produces enhanced empathic abilities and the ability to heal. The throat chakra leads to clairaudience, which is the ability to hear on the nonphysical planes. The awakening of the third-eye chakra leads to clairvoyance or the ability to see on the nonphysical planes. And the awakening of the crown center is associated both with the ability to consciously travel on the nonphysical planes and with the process of enlightenment. Incidentally, the connection of the crown chakra to the process of enlightenment is one of the points of connection between occultism and mysticism.

So there in a nutshell is a rough outline of the notion of the chakras and how these are related to occult anatomy. Again, in spite of the overly simple description I have given, we can see that we are dealing with a highly sophisticated framework here, one that encompasses physiological, psychological and parapsychological concerns. These are very important notions and will be used heavily throughout the rest of the book.

And with this background information in mind let us now see how scientists are utilizing these concepts in their work. I should also point out that what I am doing in this book follows along the lines of the following authors in that I too will turn to these notions in a scientific context to attempt to clarify and make sense out of the occult world-view. This is effectively what I mean when I speak of a synthesis of science and occultism.

6.1.1 Kunz and Karagulla; Human Energy Fields.

In 1989, a book was published by Quest (a division of the Theosophical Publishing House) entitled *The Chakras and Human Energy Fields*¹¹, written by a physician Shafica Karagulla, and a long time member and ex-president of the Theosophical society, Dora van Gelder Kunz. This book was essentially a research report, but a very unusual one. This research consisted of using a clairvoyant individual (Mrs. Kunz) to observe diseased individuals and to describe these diseased states in terms of alterations in the patient's nonphysical bodies and chakras. This research is significant because here there is an attempt to understand disease states in terms of occult physiology and to show that correspondences exist between occult and traditional medical views of human physiology. This research also illustrates the scientific utilization of clairvoyance, or what are commonly called in the occult "clairvoyant investigations".

As regards the matter of clairvoyant investigations, Karagulla and Kunz's book presents a very useful summary of individuals who have performed clairvoyant research (in Chapter VIII), starting with Paracelsus, through Swedenborg, Blavatsky, Leadbeater and Besant, Geoffrey Hodson, as well as more current authors. The issue of utilizing clairvoyance as a research and diagnostic tool is also thoroughly discussed in the context of occult anatomy. All in all Karagulla and Kunz's book is an outstanding example of the scientific attitude applied to

occult phenomena. When we discuss Occult Chemistry below we will also see another example of scientifically relevant clairvoyant investigations.

The actual research of these authors consisted of Mrs. Kunz clairvoyantly perceiving the chakras and nonphysical bodies (which they call "energy fields" in this work) of over 200 patients, mostly at the etheric level but occasionally at the astral and mental levels. Then, Dr. Karagulla would correlate these observations with standard medical diagnosis. What they found was that diseased states do indeed lead to changes in the behavior of the chakras and nonphysical bodies. They classified the behavior of the etheric body and the chakras according to the following clairvoyantly observable characteristics: color, luminosity, rhythm, rate, size, form, elasticity, and texture.

Their first step was to establish a base line for these characteristics in normal individuals, and a year was spent on preliminary observations of this nature. Having then established such a basis, diseased patients were observed and alterations in these chakra characteristics were noted. Some disease processes they observed were: dyslexia, autism, Down's syndrome, manic depression, schizophrenia, as well as the effects of drugs such as Thorazine, alcohol and narcotics, and the effects of surgical excision. All in all, these authors present a very detailed correlation between the behavior of the chakras/nonphysical bodies and the physiology of the patients they observed. These details are quite beyond the scope of our discussion and the interested reader is referred to this work.

One of the most significant conclusions to have come from this work is a detailed correlation between the chakras and the endocrine glands of the physical body. The endocrine glands are the "ductless" glands which produce and secrete hormones, and these hormones are known to have very great effects on the physical body's physiology, and as well on psychological behavior. If there is one avenue in modern science to which the connection between the mind and body has been elucidated to some extent, it is in the study of the endocrine system and its behaviors. Thus, that there should be a strong correlation between these glands and the behavior of the chakras is no surprise in light of the functions attributed to the chakras by occultists. Indeed, these researchers found that the behavior of a given endocrine gland was reflected in the behavior of the corresponding chakra. For example, if the physiological function of the pineal gland was diagnosed to be dysfunctional, it was also observed that the crown chakra was dysfunctional.

That these researchers have elucidated detailed correlations between these glands and the chakras is highly significant in the following respects. First, it lends credence to the entire concept of the chakras and occult anatomy, thus giving scientific legitimacy to occult claims. Secondly, this is a very strong step in tying together scientific and occult notions, probably one of the most pivotal steps that can be taken. This is because, as we have seen, the concepts of occult anatomy are the central rationalizing concepts of occultism, and any synthesis of science with occultism must address these issues. The work of these authors is at the heart of this matter.

The correlation they present between the chakras and the endocrine glands is:

Chakra	Endocrine Gland
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Crown	Pineal
Third-eye	Pituitary
Throat	Thyroid/Parathyroid
Heart	Thymus
Solar Plexus	Adrenals/pancreas
Root	Spine/Glandular system
Spleen	Spleen/liver
Sacral	Ovaries/testicles

Minor chakras were also noted on the palms of the hands and soles of the feet. It will also be noticed that eight chakras are described here, illustrating the differences in observations made by occultists regarding the number of chakras. The eighth chakra here listed that was not listed in the previous table is the sacral chakra, which they describe as being associated with the genital region and the root chakra.

Thus, this work is an ideal example of the mixing and blending of occult and scientific concepts. Again, the specific details and conclusions of these authors is beyond my scope here, but these details are highly relevant to elucidating further the actual connection between the physical mind and the physical body. This research is also a prime example of the scientific utilization of clairvoyance. The correlation of Mrs. Kunz's observations with modern medicine and physiology serve not only to strengthen occult claims, but serve also to expand scientific concepts.

6.1.2 Hiroshi Motoyama

Our second author involved in chakra research takes a different slant on the situation. Hiroshi Motoyama is a well known and internationally recognized authority and researcher on the connection between the chakras and physiology. He possesses PhD.s in both philosophy and clinical psychology. He is a scientist familiar with the empirical methodology of science, but as well, he is a psychic and yogi, well-versed in the practices of yoga. Thus he approaches the issue of the chakras from both the scientific and occult views, and his work reflects a combination of these backgrounds. An important feature of Motoyama's work, which sets him apart from the above researchers, is his development of a device designed to electronically measure the physical effects of the activity of chakras. Although he utilizes clairvoyance as a research tool as well, it is his "chakra machine" that I would like to focus on here.

Motoyama's theoretical point of departure involves the occult teachings of Tantra. This system of thought provides the theoretical basis for the Chinese science of acupuncture. The techniques of acupuncture, and the system of Tantra have an expanded approach to the human occult anatomy beyond what has been discussed to this point. Tantra describes the nonphysical bodies and chakras, and as well defines a system of channels and interconnections through which flow nonphysical energies. These channels are called "nadis" in yoga, and "meridians" in Chinese medicine. In acupuncture theory, this nonphysical energy is referred to as "chi" energy, and is also discussed as such in the martial arts. Theosophy and Hindu sources refer to "chi"

energy as "prana", and this energy is associated with the etheric plane and the vital life-force of physical organisms. Meridians are the specific pathways of chi energy that connect the chakras, and form a kind of structured net of chi energy flow in the nonphysical bodies. In Figure 2, three of the major nadi pathways and how they interconnect the chakras are illustrated. The number of meridians and the actual paths they form is very complex. According to Motoyama, some sources claim there are 72,000 meridians, other sources claim 340,000, and different diagrams abound as to the structure of the meridians. But, like all other things we have seen so far in our survey of occultism, though there are differences in opinion as to details, all sources agree as the existence of the meridian system. Now, this information is relevant in regard to Motoyama's work because, of the two machines he has devised, one of them is designed to measure effects related to the system of meridians.

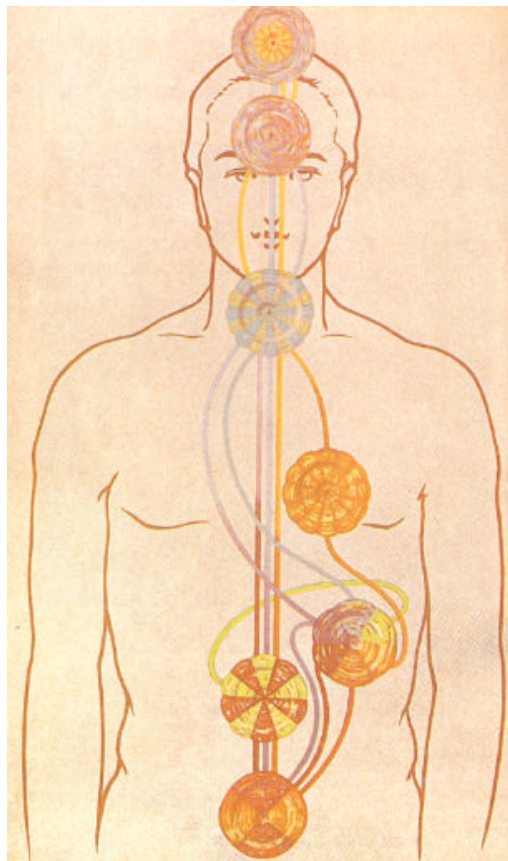


Figure 2: The petal-like appearance of the chakras along with the three major meridian/nadis pathways. From Leadbeater (1985).

These are Motoyama's own words about the design of these two machines, the AMI and the Chakra Instrument:

"The AMI--Apparatus for Measuring the Functional Conditions of the Meridians and their Corresponding Internal Organs--is an instrument designed to measure the initial skin current, as well as the steady state current, in

response to DC voltage externally applied at special acupuncture points located alongside of the base of finger and toe nails. According to acupuncture theory, these special points--called "sei (well) points are ostensibly the terminal points of meridians where chi energy either enters or exits the body...

The Chakra Instrument was designed to detect the energy generated in the body and then emitted from it in terms of various physical variables. Unlike the electroencephalograph and other instruments of physiology, it is designed to detect minute energy changes (electrical, magnetic, optical) in the immediate environment of the subject...level with the supposed location of a given chakra."¹²

I have left out Motoyama's actual design of the Chakra Instrument which he discusses in some detail and the interested reader may find in the reference to note 12. Now it is Motoyama's supposition that the nonphysical energy (chi) associated with the chakras and meridians will have a corresponding effect on the physical body. His instruments are **not** designed to measure these energies directly, because they are not physical energies and cannot be measured by physical means. Motoyama is operating under the assumption that these energies will make observable and measurable physical effects, either in the forms of electrical, magnetic or optical effects. He has thus devised a hypothesis based on occult doctrines and found a scientific and physical means for testing this hypothesis.

He has tested this hypothesis on a population of individuals divided into three groups as follows: Group A were those who showed evidence of advanced chakra activity--these are people who had practiced yoga for many years and had evidenced the use of psychic abilities; Group B were those whose chakras showed beginning activity--these were beginning students in yoga; and Group C were those with dormant chakras--these were ordinary people who displayed no particular psychic skills. It is obvious why he would choose such sample groups, for if psychic skills are indeed related to enhanced chakra activity, and this activity in turn creates physically measurable effects, then he should be able to measure these differences between groups of people who do and do not display psychic abilities.

Now what have been the results of Motoyama's measurements with these machines? Again, the technical details are very complicated, not only in terms of the medical and occult terminology involved, but also in terms of interpreting the measurements made by his instruments.

In terms of the validity of the instrumentation he utilizes, given what is known about the electrical and magnetic activity of the physical body, and given the present state of medical technology used to make these types of measurements on the body, it seems his device is reasonable. Electrical measurements are routinely made on the body and are the basis for lie-detector (polygraph) tests, measuring the activity of the heart (electrocardiography), measuring the electrical activity of the brain (electroencephalography). As well, devices such as this are used often in the biological sciences for the study of physiology, as for example the study of muscle or nerve behavior with specialized electrode devices. Magnetic measurements are also routinely made on the body as with magnetic resonance imaging (MRI). Thus, within the context of currently accepted technology, there is a definite precedence for Motoyama's approach and the devices he is using. As a matter of fact, his approach is quite standard and traditional in a

medical and biological context. All that is really unusual about what he is doing is that he is measuring areas of the body that have significance in an occult context.

Now, what are the results of his measurements? With respect to measuring the electrical response of the surface of the body in areas associated with the chakras and the sei points, he has shown a wider degree of electrical response in individuals with active chakras.

He has also found interesting physiological differences between known psychic yogis and non-psychic individuals. One example of these differences is quite interesting and dramatic. Motoyama presents an ECG (electrocardiograph) measurement of a yogi who claimed to be able to control his heartbeat. The ECG reading taken while the yogi was slowing down his heart rate indeed shows a decrease in heart rate.

These two pieces of data, with other data not discussed here, are interpreted by Dr. Motoyama as indicating that psychic individuals show generally a wider dynamic response range of autonomic nervous system activity than normal individuals. That is to say, the activities of the body that our consciousness usually has no control over, such as digestion, heart rate, and other autonomic activities show a wider degree of behaviors in psychic individuals than are seen in non-psychic individuals. Psychic yogis show definite evidence of having some degree of conscious control over bodily activities that normally are not controllable by our consciousness.

Another set of observations he presents is quite interesting. Dr. Motoyama claims to have measured the *emission of energy* from regions of the body that correspond to the locations of the chakras. These energies were optical (the giving off of light) and electrical. He concludes, on the basis of his experimental design, that these energies were created in the body, and suggests the possibility that the body, via activated chakras, may be able to create physical energy. He further suggests that this may be a direct violation of the first law of thermodynamics, which states that energy and matter cannot be created or destroyed, only transferred from one form to another.

Now, that the body itself can give off energy is not an unfamiliar situation. Our bodies are constantly emitting electrical and magnetic energies, such as can be observed by Kirlian photography, and also there are the more standard electrical emissions of the heart and brain. We can also emit energy in the form of heat when, for example, we have worked out intensely in exercise. So the emission of energy by the body is a well known situation. It is interesting that Dr. Motoyama was able to demonstrate the emission of electrical and optical energies in the regions of the body that correspond to the location of the chakras. This would indeed seem to support the contention that the chakras produce measurable effects in the physical body.

In terms of the issue of the creation of energy and the violation of the first law of thermodynamics, this seems highly unlikely. I say this, first, because the laws of thermodynamics are probably the most reliable scientific generalizations known. If science loses these, we might as well throw science away. These laws are so fundamental in modern science that scientists will go to any length to protect the validity of these laws. For example, neutrinos were postulated by physicists purely as theoretical constructs, to save what was an apparent violation of the first law of thermodynamics. Later, when the existence of neutrinos was confirmed, this in turn only confirmed the intuition of scientists regarding the validity of the laws of conservation of energy.

Yet, Dr. Motoyama's questioning in the direction of the laws of thermodynamics borders on some very profound questions about the compatibility of science and occultism. These questions involve the relationship between the properties of physical energy, and the known forces of modern science and how these are related to the nonphysical energies of the occultist, such as chi (prana), or etheric, astral and mental energies.

In the case of Motoyama's results, it is extremely interesting that he would measure the emission of energy out of regions of the body associated with the locations of the chakras. However, I do not feel that it is reasonable to say this energy was created *de novo* and is a violation of the first law of thermodynamics. It is known, and Leadbeater even taught, that the chakras are *energy transducers*. This means that one of the main functional roles of the chakras is to transform or convert energy from one form into another. Thus, as a light bulb converts electrical energy into light energy, then likewise, the chakras convert nonphysical energies into different nonphysical energy types, and probably convert nonphysical energy into physical energy. This is an alternative, and I feel more reasonable, explanation of Dr. Motoyama's results; the physical energies he measured in his experiments were the transduction products of the chakras. In this case, we are still converting energy from one form to another, though now we are converting nonphysical energy into physical energy. In spite of this dichotomy of nonphysical and physical energies, we are still only converting energy, not creating or destroying it. Thus, there is no violation whatsoever of the laws of thermodynamics.

From this point of view, the interesting and relevant question becomes: what are the means, that is, what are the specific mechanisms by which chakras convert nonphysical energies into physical energies? This is an extremely important question in the scope of a unification of scientific and occult concepts and must be fully and clearly addressed. Unfortunately, I will not pursue this topic in any detail in this book. However, it is a highly important question that is wide-open at this point.

Thus, we have reviewed two profound scientific researches into the nature of the chakras. First, these studies serve as examples of scientific approaches to occult phenomena, utilizing occult theory as the basis for these researches. This is in contrast to traditional parapsychology, which rejects occult claims and attempts to measure "psi phenomena" without any theoretical basis. The success of these studies in showing meaningful demonstrations of psychic phenomena rests primarily in the scientific interpretation of mostly very ancient occult teachings. Occult theories show these scientists where to look, so to speak, and when scientists look there with their instruments, measurable effects are indeed observed.

The second point illustrated by these examples is that the utilization of scientific methodologies helps to clarify and make sense of occult teachings in a more organized and coherent fashion. And as such, occult teachings get translated into modern scientific terms, which then imparts legitimacy to occult teachings.

The third point illustrated by these examples is that, the opening up to occult theories, and the attempt to measure and confirm them in a scientific fashion expands the horizon of science. In the case of chakra research, the result is new ways to conceptualize the link between mind and body. Also, if these scientific researches into occult anatomy are pursued far enough and convincingly enough, they hold the promise of new means of conceptualizing disease processes and thus open up new possibilities for treating these diseases.

6.2 Other Examples Of Scientists Using Occult Ideas

At this point let us now turn to a few more examples of scientist who are operating from an occult viewpoint. We will now leave the field of health, medicine and chakras and turn to examples in which other fields of science are involved and other facets of occult teachings are involved. Again, in the three examples to follow we will see the three main effects of science embracing occultism in operation: 1. the legitimizing of occultism, 2. The translation of occultism into more modern and scientific terms, and, 3. the expansions of the horizons of science.

6.2.1 Landscheidt's Approach to Astronomical Forecasting.

Having obtained his doctorate in the natural sciences and philosophy, as well as law, Theodore Landscheidt has since 1974 been involved with the study of cycles of solar activity. Grounded in the holistic and cyclic philosophical concepts of astrology, this author presents new theoretical approaches to understanding the relationship between solar and terrestrial events¹³. Utilizing concepts from fractal geometry and chaos theory, he develops mathematical systems to predict the effect of solar activity on such phenomena as weather patterns, fluctuations of animal populations, fluctuations in human economic activities, and spurts of creative activity in human history. These are already situations that we have seen are describable in terms of Chaos theory. The significance of Landscheidt's work is that it exhibits the same spirit as Rudhyar's approach to astrology.

Landscheidt's basic assumption in this work is the self-similarity of Nature (see the discussion about Dane Rudhyar for details). He is postulating that changes at one level of organization will create changes at lower and nested levels. That is, the Hermetic Axiom is the explicit basis for this scientific work. Thus he correlates the effects of sunspot activity with a variety of terrestrial phenomena, illustrating this self-similarity effect.

His approach is imminently a *historical* approach and, from a philosophical level, addresses the same scientific issues that Rudhyar's work does. That is, Landscheidt's work addresses the issues of how we scientifically conceptualize real events that occur in the real world and have definite and irreversible histories. Yet Landscheidt goes one step further than Rudhyar by actually utilizing scientific tools and observations. He does not turn to astrological symbolism as Rudhyar did. By utilizing scientific tools as he does, Landscheidt illustrates that there is a correspondence between real life events that can be understood in terms of the self-similarity of Nature principle, that can be captured theoretically and predicted. His approach leaves open the prospect of direct confirmation by scientific observation.

This whole issue of the self-similarity of Nature, and how it is related to the notions of time and irreversibility is extremely important in the context of a synthesis of science and occultism. These issues will be fully explored in the chapter "A New Concept of Motion", and will not be discussed any further here.

6.2.2 Robert Monroe.

Monroe, the well-known author and astral projector (though he uses the term "out-of-body experience"), has been performing research on the out-of-body experience at the Monroe Institute, in Faber, Virginia for close to twenty years now. Though Robert Monroe is not formally a scientist, I am including him here because his research on the out-of-body experience is both highly scientific, and an excellent example of the rationalization of occultism into more modern terms.

The results of some of his researches are compiled in his two books *Journeys Out Of Body* and *Far Journeys*¹⁴. Monroe's work is significant in that he has rediscovered many facts

that occultists have claimed, though he may use different words to describe the phenomena. These phenomena include: the nature and inhabitants of the nonphysical planes, telepathic communication (i.e. "rote"), and the channeling of nonphysical entities.

There are however, some very unique features of Monroe's work. First is the non-occult presentation of his results. That is, the dogmatic assertions that tend to accompany occult investigations are notably lacking in Monroe's work. Monroe comes across as a very down-to-earth and normal guy, in spite of the fact that he has had many contacts with "dead people", and that he has personally communicated with beings from other systems of reality. Monroe's primary stance seems to be that of a relatively sophisticated parapsychological approach. Secondly, the scope of the nonphysical reality in which our physical universe is embedded, as described by Monroe, is much vaster than usually described by occultists (excepting Seth's view, of course). Monroe describes the "rings" about the Earth, and these correspond closely to the septenary arrangement of planes described by occultists and yet, from Monroe's perspective, these "rings" are the "backwoods" of an even vaster interdimensional civilization. An implication of this interdimensional civilization will be discussed below.

In terms of scientific methodology, Monroe's real contribution has been the development of a technique by which to stimulate the out-of-body experience, and as well record these experiences. The means he uses to stimulate OOBes he calls "Hemi-Sync". This is shorthand for the term "hemispheric synchronization". What this process entails, as the name implies, is the synchronization of the left and right hemispheres of the brain using sound waves. Using headphones and tape recorders, he inputs different sound waves into each ear, and thus into each hemisphere of the brain. According to Monroe, these sound waves will constructively interfere with each other, a process by which two wave patterns interact resulting in the production of one wave that is a combination, or sum, of the two original waves. This constructive interference produces in the brain one single wave pattern present in both hemispheres. And somehow, according to Monroe, this process stimulates one's ability to have an out-of-body experience.

Now, I personally have had many OOBes, having learned to do this some years ago. I will not be discussing these experiences to any extent in this book, except to a minor extent in chapter 13. The point of mentioning this here is that the methodology of achieving this experience has a lot to do with concentration. One does not need any type of mechanical aid whatsoever to achieve this experience. So I question the validity of Monroe's theory of the "Hemi-sync" process. But I have tested one of his Hemi-sync tapes, and I ended up having an OOB. Thus whether his theory is right or not, his technique seems to work, at least I have verified it for myself. And the fact that his technique works is what is important, because it seems that Monroe has developed a relatively simple and reproducible means of stimulating the out-of-body experience.

If there is a theory behind Monroe's Hemi-sync process, it may actually entail the physical stimulation of the crown and third eye chakras by creating an electrical resonance in the brain with his Hemi-sync tapes. It is activating these chakras that endows one with the siddhis he describes in his book (these being mainly out-of-body experiences and clairvoyance). If this is indeed the case, then Monroe's technique is, in a sense, the opposite of Motoyama's approach. If we recall, Motoyama is interested in measuring physical *effects* of the chakras.

Monroe, it seems, has found a physical way to *affect* the chakras. This would then be mutually confirming evidence of the existence of the chakras, and thus, very nice confirmation of occult theories.

As well as being able to stimulate the OOB state, Monroe has as well designed a special chamber with which to record the experiences of those in this state. First, he has taught others to retain the ability to speak when in the out-of-body state. This is itself an accomplishment of some merit. Then, these subjects are placed in a special environment in which their verbal reports can be tape recorded during the actual experience. So Monroe has created an effective means by which to record the out-of-body experience in an "eye-witness" type fashion. This eliminates the need of recording the experience after it is over, thus producing more accurate first hand accounts of the OOB environment. This is a problem I have personally encountered, and it is very easy to forget what occurred during the OOB, in the brief moments between "waking up" and recording the experience.

With such tools in hand, Monroe has researched in great detail the world of the out-of-body experience. And basically, he has confirmed the teachings of occultism. He describes the after-death state, the nature and inhabitants of the nonphysical planes, the use of common siddhis and other phenomena of an occult nature. He gives different terms to these phenomena though. Thus, the "planes" become "rings", a "spirit" becomes a "curl", a "thought-form" becomes a "rote-ball", "telepathy" becomes "rote transfer", and so on. I think there is a high degree of validity to these terms because they are a better indicator of the nature of the phenomena as these subjectively appeared to Monroe and his group. It is clear that Monroe is describing occult phenomena that has been described by others, but he is not making the mistake of trying to fit his observations in other people's terms, which at times is simply not possible given the subjective nature of occult experiences of altered states of perception, and the tremendous variety of experiences that are possible in the nonphysical worlds.

So again we have before us an example of a scientific attitude and approach to occult phenomena. Like most examples I have surveyed here, I cannot even begin to stress that only the most salient features have been described. Monroe's scope and conclusions are vast in terms of the nature of the human experience and the directions towards which humankind is moving. Again, all I can do is refer the interested reader to the source. At this point I will discuss one of the more obvious and dramatic implications of Monroe's views.

6.2.3 The Quest For Life In Outer Space.

The occult ideas presented above have an incredible bearing on the contemporary interest to find intelligent life among the stars. The main point here is that we currently are looking in the wrong direction, so to speak. Monroe, for example, is quite clear about meeting alien consciousnesses in his travels in nonphysical reality. The popular images of other planets in other galaxies that we will reach via some type of advanced space technology are highly unrealistic in light of occult notions of space, time and the structure of the universe. In all likelihood, "space travel" is probably a relatively commonplace event among intelligent life forms, but it is probably achieved by traveling through nonphysical dimensions and by communicating in nonphysical dimensions. Our species is probably quite primitive, if not naive,

by attempting to communicate with intelligent life by traveling through the vast empty reaches of physical space. In light of this perspective on "space travel", many popular scientific notions concerning the limits of physical space travel, such as the constancy of the speed of light, the EPR paradox, etc., are no longer relevant.

Also, the notion of "time travel" takes on new meanings when viewed from an occult perspective. The paradoxes from relativity theory, again, simply would not hold water in this context. Time travel is possible in the nonphysical plains and has been reported by occult authors such as Robert Monroe. The problem with the concept of time travel in general though is that, as popular conceptions stand, it assumes a very distinct and very linear form to time. From the occult viewpoint, time does not have such a form. Probably the expert on this issue is Seth, and he explains that our "time" is but one of a myriad of levels of time, all of which interblend and interconnect with each other. Furthermore, we literally *create* time as a part of what Seth calls our "camouflage", and by this he is referring to normal space and time. He further explains that there are different *types* of time totally unlike the time we inhabit now. From the standpoint of science fiction books and Newtonian conceptions of the universe, this is a very messy situation. Yet occult reports generally support this view of time.

The question of how physical time and space are related to the nonphysical planes is wide open at this point. Some ideas will be put forth in the chapter "A New Concept Of Motion". It is likely that through a synthetic view, we may be able to come upon new conceptions of space and time that will allow us to bridge vast distances and times in completely unexpected ways.

6.2.4 Phillips and Occult Chemistry.

We are going to end our survey of occultism, and this first section of the book, with what is probably the most dramatic example of a scientific analysis of occult phenomena available today. Here I will summarize Stephen Phillips' interpretation of Annie Besant and C. W. Leadbeater's Occult Chemistry in terms of modern particle physics. Above I referred only briefly to Besant and Leadbeater's Occult Chemistry, but here I will explain this in more detail. It should be emphasized that, because of their occult world-view, Besant and Leadbeater described subatomic realities that the science of their day was only on the verge of describing.

Today particle physics is one of the most publicized and dramatic branches of modern physics. It was somewhat of a shock to the scientific world when, at the turn of the century, it was realized that the atom was not the indivisible and fundamental unit of matter that it had been envisioned to be. The discovery of the electron in 1897 by J.J. Thompson opened up to mankind the world within the atom. By the early 1930s, based on Rutheford's model of the atom, and Chadwick's discovery of the neutron (in 1932), it was believed that all matter was composed of four basic quantum particles: electrons, protons, neutrons, and photons (the quantum of electromagnetic radiation). Thus, these particles were dubbed "elementary particles". However, further advances soon showed other elementary particles besides these four. By 1947 there were 14 known elementary particles, by 1957 there were 32, by 1965 there were over 60, and today there are over 100 elementary particles, and it is now apparent that most of these particles are not elementary at all.

Today there is a great flurry of activity in particle physics to ascertain the meaning of this situation. Many theories have been proposed to account for this diversity of particles. Yet available technology limits the physicist's ability to determine which of this plethora of theories is correct. Thus, new and larger accelerators, the machines used to "detect" these particles, are being constructed to explore deeper into the jungle of variety that appears to be in the heart of matter. It is questionable if physicists actually *discover* these particles in their accelerators, as opposed to *creating* them. But it is not my intention here to go into the subtleties of modern subatomic physics. This background information is a necessary introduction to Occult Chemistry.

Meanwhile, as all of this activity has occurred in 20th century physics, there has been since 1895, on dusty back shelves, a most curious set of observations by Besant and Leadbeater. In November, 1895, in a Theosophical magazine called *Lucifer*, an article by Besant and Leadbeater was published in which it was claimed that these two had, by the use of their clairvoyant faculties, observed directly the structure of the elements hydrogen, oxygen and nitrogen. Here were published diagrams and detailed descriptions of the exact structures of these elements as they had "seen" them clairvoyantly. This was the beginning of Besant and Leadbeater's clairvoyant investigation into the world of the atom that was to continue until 1933 and involve the observation of every known element, some seemingly unknown elements, and was to include molecules as well as the description of isotopes¹⁵ at a time before isotopes were widely accepted in science. The initial investigations were collected and published in the first edition of *Occult Chemistry* in 1908. A reprint of the 1908 material was issued in 1919 as the second edition of *Occult Chemistry*. And finally, the sum total of Besant and Leadbeater's clairvoyant observations of the chemical elements were collected and published posthumously in a third edition of *Occult Chemistry* in 1951.

Now it is imminently reasonable to ask: How did Besant and Leadbeater actually see atoms? This ability, they explained, was one of the many siddhis or psychic powers that one can develop by practicing yoga. Besant and Leadbeater referred to this ability as "magnifying clairvoyance", Hindus refer to it as "anima", but it has since been dubbed "micro-psi"; the ability to directly perceive minute or gigantic structures that the eye cannot see. According to Leadbeater, there is a tube-like structure which protrudes from the Ajña, or third-eye chakra of the etheric body and it is by means of utilizing this tube as an organ of vision that one can exercise micro-psi. The interested reader will find the details in note 16. Much more will be said about this ability in the section "Biological Perceptions".

Here I will give only one example of what Besant and Leadbeater observed, and the most simple example at that, this being their observation of what they thought was hydrogen. In their own words:

"The first chemical atom selected for this examination was an atom of hydrogen (H). On looking carefully at it, it was seen to consist of six small bodies, contained in an egg-like form. It rotated with great rapidity on its own axis, vibrating at the same time, and the internal bodies performed similar gyrations. The whole atom spins and quivers and had to be steadied before exact observation is possible. The six little bodies are arranged in two sets of

three, forming two triangles that are not interchangeable, but are related to each other as object and image (mirror images). Further, the six bodies are not all alike; they each contain three smaller bodies--each of these being an ultimate physical atom--but in two of them the three atoms are arranged in a line, while in the remaining four they are arranged in a triangle."¹⁷ (parenthetical remark mine)

Figure 3 shows a picture of the structure of hydrogen as it was clairvoyantly perceived by Besant and Leadbeater. The designations on this picture need not concern us here. Now, one must remember, these words were written in 1895, almost 35 years before the picture of the atom as we see it today was developed. The spinning and vibrating motions they describe here are very common notions today, but were utterly unthinkable given the state of scientific knowledge in 1895. However, if this is indeed hydrogen, then it is nothing like the current view of the structure of the hydrogen atom in which one lone electron orbits about a nucleus of one proton. This most obvious discrepancy will be discussed below.

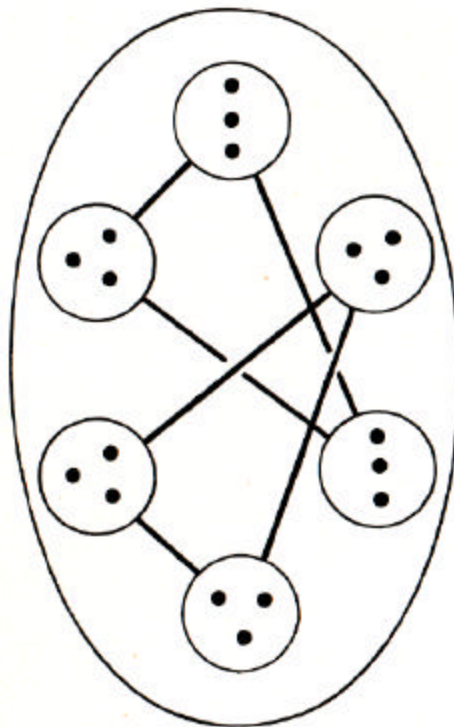


Fig. 1.6. M.P.A. of hydrogen

Figure 3: The structure of hydrogen as clairvoyantly observed by Besant and Leabeater. From Besant & Leadbeater (1919).

Again, this is only the simplest example of atomic structure observed by Besant and Leadbeater. The heavier elements they describe as having shapes like funnels, octahedrons, tetrahedrons and other regular polygon shapes. Figure 4 shows drawings provided by Besant

and Leadbeater which illustrate some of the atomic structures that they saw. The reader will note how complex these structures are. The identities of the atoms in this diagram are: (a) lithium, (b) sodium, (c) beryllium, (d) boron, (e) carbon, (f) iron, (g) neon. It was not until many years later that physicists discovered these same shapes in the equations of quantum theory. Today it is standard to attribute regular polygonal shapes to atoms (or more precisely to the orbitals of atoms) but again, in 1895, this was unthinkable from a scientific perspective.

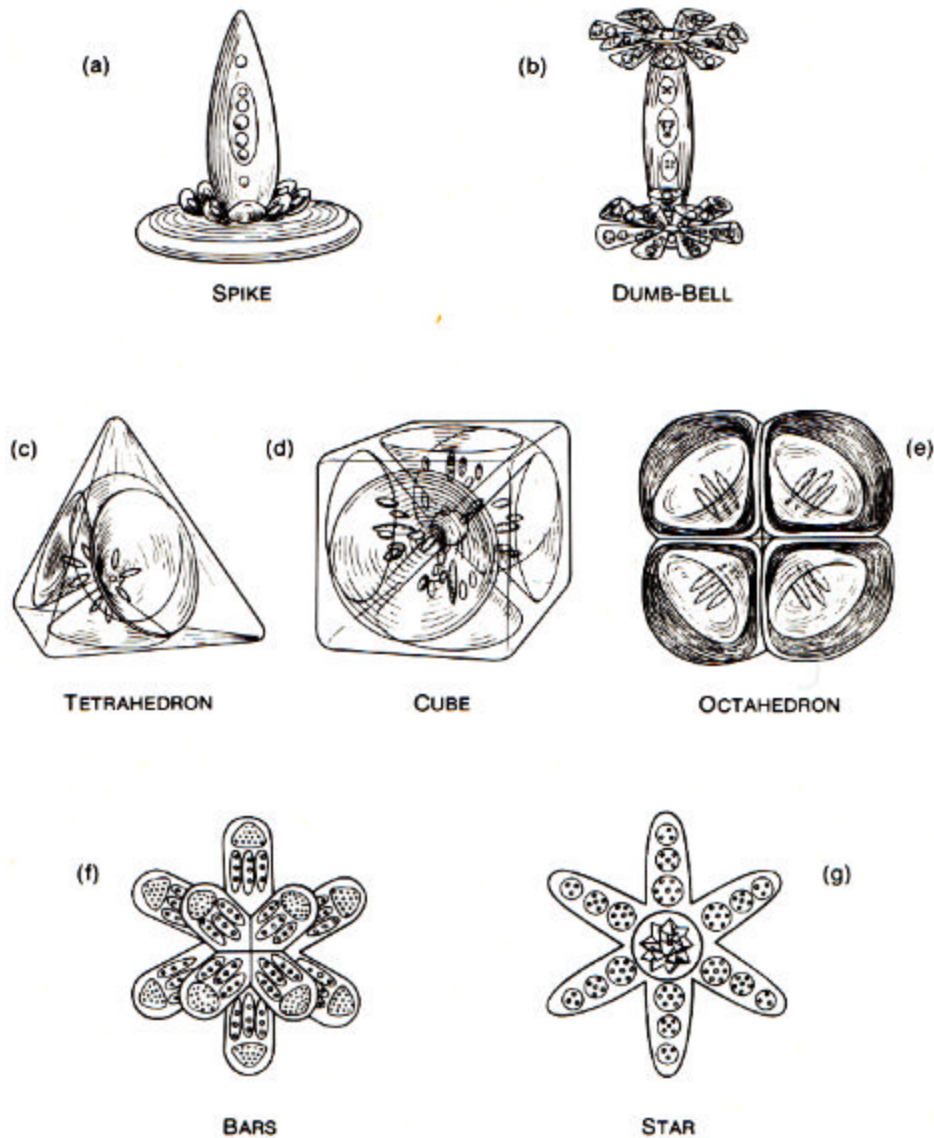


Figure 4: Examples of atoms clairvoyantly perceived by Besant and Leadbeater. From Besant & Leadbeater (1919).

As well, Besant and Leadbeater consistently observed that every element was made up of large numbers of only two particles which were identical to one another except that they were mirror images of one another. They called these particles the "ultimate physical atom", or

U.P.A.. Figure 5 shows the two mirror images of the U.P.A. as it was seen by Besant and Leadbeater. Here these are depicted as "positive" and "negative". Also, the U.P.A. is depicted in Figure 3 as the small circles with either a plus or a minus inside of them. Again, the reader can see from Figure 5 that even the U.P.A. which, according to Besant and Leadbeater, was the ultimate constituent of physical matter, possesses a highly complex structure. These U.P.A.s were seen to form combinations amongst themselves, and these combinations would then interact to form the geometrical shapes of regular polygons. From the description above, and looking at Figure 3, it can be seen that the clairvoyantly observed hydrogen consisted of 18 U.P.A.s. Three U.P.A.s would interact to form a circular unit. Three of these circular units would then form a triangle. And the hydrogen they observed consisted of two of these overlapping triangles. A most complicated arrangement indeed!

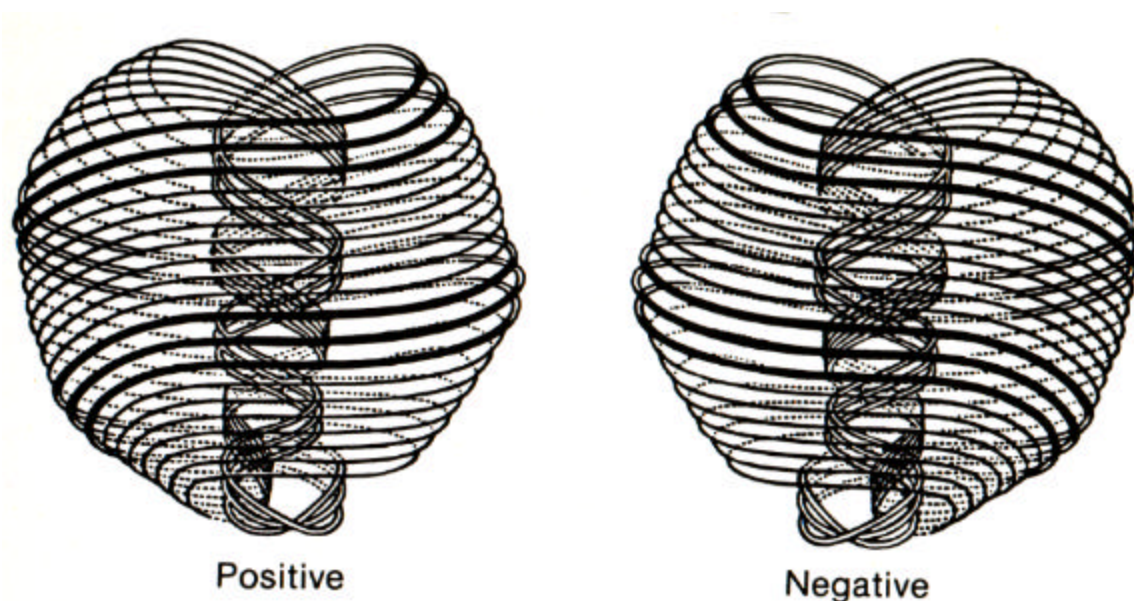


Figure 5: The structure of the ultimate physical atom, or U.P.A.

In their investigations they discovered a curious rule, if they counted all of the U.P.A.s in an atom and divided this number by 18, then they roughly obtained the atomic weight of that element as ascertained by science. For example, in oxygen they counted 290 U.P.A.s, which divided by 18 gives 16.11, which is very close to the value of 16.00 (to two significant figures), this later being the accepted value of the lightest isotope of oxygen. As well, in nitrogen they counted 261 U.P.A.s, which gives 14.44 when divided by 18, and the accepted weight of the light nitrogen isotope is 14.00 (again, at two significant figures). This rule of dividing by 18 to give the accepted molecular weight worked consistently for Besant and Leadbeater in their investigation, and they could even deduce the identity of an unknown element by this rule. As a matter of fact, this ability to deduce the accepted atomic weights of the elements from the number of U.P.A.s they observed was the only thing Occult Chemistry had in common with the chemistry of 1895.

So as the 20th century passed, Occult Chemistry sat mostly ignored on Theosophical bookshelves, much to the disappointment of scientifically oriented Theosophists¹⁸. It seemed to have had little to do with the discoveries and concepts in modern physics and became almost a blemish to Leadbeater and Besant and their claims about clairvoyance.

And this was the situation until one day in the late 1970s when a physics graduate student at the University of California happened across some of the diagrams from Occult Chemistry. This was Stephen Phillips, and in his own words:

"While studying several years ago in the United States of America as a physics graduate student, I came across one day a copy of the book *The Physics of the Secret Doctrine* written by William Kingsland (London: Theosophical Publishing House, 1910). One page in particular captured my attention, for it displayed diagrams of the "atoms" of hydrogen, nitrogen, and oxygen, supposedly highly magnified through the use of a form of extra-sensory perception. The diagram of the "hydrogen atom" was especially curious and interesting, because I immediately recognized in it the physicist's model of a proton as a triangular cluster of three particles that he calls "quarks." On returning to England a few years later, I made inquiries about the source of these drawings and soon discovered more curious things."¹⁹

Indeed, the most curious, if not utterly profound thing that Dr. Phillips discovered is that *Besant and Leadbeater's clairvoyant descriptions of the chemical elements are completely consistent with the Quark, Quantum Chromodynamic and Super-String theories of modern subatomic physics*. This he details in great depth in his 1980 book, *The Extra-Sensory Perception of Quarks*. In this book, Dr. Phillips literally reconciles Occult Chemistry with modern physics. Dr. Phillips has vindicated, probably as strongly as is possible (next to clairvoyantly seeing the elements for himself), Besant and Leadbeater's Occult Chemistry. Instead of being an embarrassing blemish to Theosophy, because of Dr. Phillips' work, Occult Chemistry now stands as a glittering testimony to the validity of Besant and Leadbeater's claims. This is a highly important point and we will return to it below.

Dr. Phillips' analysis of Occult Chemistry is highly complex and technical, and is given in the mathematical terms of modern physics (group theory to be precise). I have no intention here of going into the technical details of Dr. Phillips' analysis, for my background in modern mathematical physics is not even good enough to do so. But with my chemist's knowledge of mathematical physics, it is apparent to me that what Dr. Phillips has done is indeed correct from a scientific standpoint. What I will do here is simply present a simple and qualitative description of Dr. Phillips' analysis of Occult Chemistry. The reader interested in further detail is referred to the bibliography.

Dr. Phillips, as stated in his quote above, has reinterpreted Besant and Leadbeater's observation to be not those of atoms, but of quarks. The notion of quarks was introduced into modern physics in 1964 by M. Gell-Mann and G. Zweig to explain the nature of the many elementary particles that had been observed in the physicist's accelerators up to that point in time. Quarks are even more fundamental than elementary particles, and serve as the building

blocks of the elementary particles. In other words, quarks are sub-elementary particles. They have never been directly observed, but as a theoretical construct they have proven very useful to physicists, and there is indirect evidence that quarks indeed do exist. Thus, the notion that quarks exist is generally accepted in the scientific community. However, the original notion of quarks as presented by Gell-Mann and Zweig has undergone considerable modification, and today there are many equally plausible mathematical models of quarks in physics. This is too technical of a topic to go into here, but suffice it to say, one of these current models of quarks was expounded by Dr. Phillips²⁰. It is with this quark model that Dr. Phillips explains the observations of Besant and Leadbeater.

However, Dr. Phillips model is actually a *sub-quark* (or composite quark) model. That is, in his mathematical model, he defines a set of particles that serve as a building block for quarks. For the informed reader, Dr. Phillips' model is a: "unified hadron-lepton theory, based on the symmetry group $SU(10)_{\text{flavour}} \times SU(10)_{\text{colour}}$. It predicts that quarks are composite and there exist five generations of singly flavoured quarks mirrored by a finite heavy lepton sequence"²¹. What this means in simpler terms is that Dr. Phillips has made up a mathematical model of quarks by defining them in terms of more fundamental particles (i.e. sub-quarks). The physical situation implied by Dr. Phillips' model is that we have the following conditions with regard to how matter is constructed or structured: sub-quarks make up quarks, quarks make up elementary particles, elementary particles make up atoms, atoms make up molecules, and combinations of molecules make up the cells of our bodies, as well as the rest of Nature.

How Dr. Phillips has reconciled Besant and Leadbeater's clairvoyant observations of the elements with modern science is by identifying the sub-quarks in his model with the U.P.A.s observed by Besant and Leadbeater. That is, the U.P.A.s are sub-quarks, and he calls his sub-quarks "omegons" to indicate that they are the final and smallest form of physical matter (omega is the Greek letter for "z"). Making this identification, Dr. Phillips can then deduce mathematically the possible combinations of the sub-quarks in his model. What he has shown is that *the sub-quark combinations predicted by his model are almost in exact agreement with the detailed structures presented by Besant and Leadbeater*. Again, I cannot stress enough the technical and mathematical nature of Dr. Phillips' analysis. His analysis is not some simple analogy or qualitative identification, it is a rigorous mathematical deduction of the structures observed by Besant and Leadbeater. As such, it is not something one can dismiss lightly.

Even the errors and discrepancies between Dr. Phillips mathematical deductions, and Besant and Leadbeater's observations can be explained in terms of simple counting errors on the part of Besant and Leadbeater. For example, there is a large discrepancy between the number of sub-quarks that Dr. Phillips predicts would make up the element europium, and the number of U.P.A.s that were actually observed by Besant and Leadbeater. We must remember that hydrogen itself had 18 U.P.A.s in its structure and europium (atomic weight = 150.92 grams/mole) had 5,843 U.P.A.s as counted by Besant and Leadbeater! Dr. Phillips predicts that this element should contain 5,754 sub-quarks, thus there is a discrepancy of +89 on the part of Besant and Leadbeater.

In regard to these types of errors, what must be realized is that Besant and Leadbeater did not actually count all of the U.P.A.s in the heavy elements because there were so many of

them. Instead, they would find some type of repeating structure in the element they were observing (such as a "spike" or "funnel", as were the names given to some of the structures observed), count the number of U.P.A.s inside that structure, and multiply the number of U.P.A.s they counted in the structure times the number of times the structure occurred in an element.

As an example of how counting errors may have occurred during micro-psi observation, let's look at the case of sodium as portrayed in Figure 5b. There are twelve funnel projections at either end of the sodium atom (though you can't see all of these in the picture, this is what Besant and Leadbeater describe in the text of *Occult Chemistry*). Each of these funnels contains 16 U.P.A.s. Thus there are 24 funnels with 16 U.P.A.s in each giving a total of $(16 \times 24 =)$ 384 U.P.A.s. The connecting rod has 14 U.P.A.s in it, and the concentric spheres at either end of the rod have in them 10 U.P.A.s each. In all, the sodium atom as observed by Besant and Leadbeater has a total of 418 U.P.A.s in it. Dr. Phillips predicted, based on his sub-quark theory as applied to the known structure of sodium, that the structure observed by Besant and Leadbeater should have had 414 omegons in it. Thus, this discrepancy of 4 U.P.A.s is accounted for by Dr. Phillips in assuming that Besant and Leadbeater overcounted two U.P.A.s in the two concentric spheres at either end of the sodium atom. It is in such a fashion that Dr. Phillips accounts for the majority of errors present between his predicted number of sub-quarks, and the number of U.P.A.s that Besant and Leadbeater counted. What is more, the total error of counting is less than 5% of predicted values to begin with! Scientists are lucky to get such small errors with normal science, let alone in this case!

Now, I have gone off on these details to give the reader some idea of how complicated both the Occult Chemistry observations and Dr. Phillips' analysis of them really are. It took me quite some time to understand the situation myself. And, like much in this survey of occultism, I have only given the smallest hint of the complexity of the matter. Not only were the atoms themselves, as clairvoyantly observed, made up of many complicated structures as Figure 5 indicates, but the U.P.A. itself has the very complicated structure shown in Figure 4. I do not want to go into the technicalities any further here, and the interested reader is referred to Dr. Phillips' book.

Yet even Dr. Phillips' book does not begin to capture the massive complexity of Besant and Leadbeater's observations. I had read Dr. Phillips' book *before* I had read an actual copy of *Occult Chemistry* (the 2nd edition). In the latter book are found a wealth of details of scientific worth that Dr. Phillips does not even address in his book, most notably the detailed structure of the U.P.A.²². I wrote to him personally in 1987 asking his opinion about the details of Occult Chemistry not mentioned in his book. He very kindly responded with a letter in which he explained to me his technical analysis of the details left out of *ESP of Quarks*, and I can assure the reader that, if one is not familiar to a relatively high degree with the mathematics of modern subatomic theories, then one will likely not understand what Dr. Phillips is talking about, because I barely did. But, as one example, Dr. Phillips has successfully correlated the structure of the U.P.A. as shown in Figure 4 with current models known as "Superstring" models. That is, Dr. Phillips is claiming that the U.P.A. itself is indeed the "superstring" spoken of in modern subatomic physics. Again, the technicality of this matter is far beyond the scope of this book, but the interested reader is referred to note 22 for further information on this topic.

Now, having given the reader some idea of what Occult Chemistry is, I would like to critically analyze this situation. For though I have painted a picture above in which it seems that Dr. Phillips has vindicated Occult Chemistry beyond question, this is actually not the case. There is one major technicality that cannot be ignored in Dr. Phillips' analysis. This involves the fact that the only way in which he could get the numbers generated by his theory to match the actual observations of Besant and Leadbeater, was to have assumed that, when they were observing the sub-quark structure of an atom, they were not observing one atom, but *two* atoms that had somehow fused together.

The reason for this discrepancy can best be understood if we consider the structure of hydrogen as it was observed by Besant and Leadbeater and how this relates to the current scientific picture of hydrogen. Again, referring to Figure 3, the clairvoyantly observed structure consisted of two overlapping triangles, with each triangle containing 9 U.P.A.s. In contrast, the contemporary scientific picture of hydrogen is of a lone electron orbiting a nucleus of one proton. Yet, from the viewpoint of modern quark theory, that lone proton is actually an arrangement consisting of three quarks. Dr. Phillips, using his sub-quark model, further claims that each quark is in turn made up of three sub-quarks. Thus, according to Dr. Phillips' sub-quark model, the hydrogen atom consists of 9 sub-quarks. But in Besant and Leadbeater's hydrogen, there were two triangles each of 9 U.P.A.s, thus Dr. Phillips' conclusion is that each triangle must correspond to an atom of hydrogen as understood by modern science. Or in other words, the hydrogen structure observed by Besant and Leadbeater was actually made up of two atoms of hydrogen.

Dr. Phillips explains this discrepancy in a most interesting fashion by postulating that the psychic ability (anima or micro-psi) used by Besant and Leadbeater in some manner caused the fusion of two atoms into one unit before they observed it. He explains this process as follows: Prior to the act of micro-psi observation, somehow the initial effect of micro-psi is to *perturb* two atomic nuclei and cause them to break apart. These two nuclei then coalesce and reform as one object, this object being what was actually observed by Besant and Leadbeater. Again, I am oversimplifying here considerably. Dr. Phillips' explanation of this phenomena has to do with the Higgs vacuum and the various phases this vacuum can contain. I want to stress that I am leaving much physics out.

This is not an implausible possibility, suggesting as it does that micro-psi involves some type of psychokinesis, as well as specific mechanisms of psychokinesis (that of perturbing the states of the Higgs vacuum--which is extremely significant from a parapsychological perspective). Furthermore, this situation is in line with the essence of the Heisenberg Uncertainty Principle, which states that, in any attempt to observe a microscopic system, the observer will always exert some type of effect on the system and thus affect the measuring process. What Dr. Phillips is saying is that clairvoyant observations are also subject to this limitation, and that Besant and Leadbeater affected the systems they were observing without realizing this fact. Again, I must stress to the reader that I am only explaining this situation in the most simplified of fashions so as to avoid technical jargon.

The point of mentioning this strange discrepancy in the Occult Chemistry observations is to make it clear to the reader that the vindication of Besant and Leadbeater's observations is not cut and dry. Had Dr. Phillips' theory *not* had this major discrepancy, then the vindication would

have been close to absolute. However, since this discrepancy is present the situation is made more ambiguous. This discrepancy raises as many new questions as Dr. Phillips' analysis has resolved. For example, why did only *two* atoms get affected by this processes of micro-psi observation? What is it about micro-psi that causes such a perturbation?

Also, it should be stated that Dr. Phillips' model stands among many competing models in subatomic physics, none of which can be completely verified with the present technology. That is to say, it is not known if Dr. Phillips' hadron-lepton unification is true or not, for like many other mathematical models in contemporary physics, it has not been experimentally verified. In Dr. Phillips' own words:

"If the data happens to be too imprecise to be able to distinguish between rival theories, scientific understanding can become ambiguous and uncertain for a while. If a crucial experiment or measurement is unavailable or unfeasible in terms of available technology, scientific understanding may also become polarized, with different schools of thought emerging in the scientific community. This is an endemic tendency of high-energy physics, where new ideas and models frequently outstrip technological capabilities to verify their predictions."²³

What is certain though is that Besant and Leadbeater's observations are no longer an unusual curiosity of no scientific relevance. For even in spite of the need to postulate this perturbative effect of micro-psi, there are still simply too many correspondences between what Besant and Leadbeater observed and what is now known about subatomic behavior. The shapes they described, the fact that they observed isotopes of elements before isotopes were widely recognized in science, the fact that they observed spinning and vibrating motions of these particles, and a host of other relevant observations; *all of these are ideas that were completely unknown to the science of their day.*

It seems to me very reasonable to ask how would they have known and identified these types of behaviors if they did not actually observe something valid regarding the microscopic world of matter? Both Besant and Leadbeater were relatively well-informed about the science of their day, as is apparent when you read their writings. That does not mean, however, that they were in a position to know, better than the prominent chemists and physicists of their day, the true nature of matter. There are simply too many correspondences between their observations and modern physical theory to think that it is all a coincidence, or a lucky guess on Besant and Leadbeater's part.

What this means is, whether or not specific details turn out to be correct or incorrect in the future, we must take Occult Chemistry seriously. Whether Dr. Phillips' model is correct or not, he has already vindicated Occult Chemistry by showing the overwhelming correspondence between Occult Chemistry and modern particle physics. Dr. Phillips has raised the status and dialogue associated with Occult Chemistry from that of doubt and suspicion into one requiring a thorough understanding of modern physics. The evidence had been sitting on Theosophical bookshelves for all of these years, all it took was particle physics to advance far enough and someone well enough informed on these matters to come and point out the correspondences,

and this is what Dr. Phillips has done. In spite of details, Dr. Phillips' interpretation has shown that Occult Chemistry and modern physics are identical in spirit. Besant and Leadbeater described the quantum nature of physical matter in 1895, exactly as science would 30 years later²⁴. How did Besant and Leadbeater know that matter was quantized? And when we do consider the massive mountain of specific details (which I have barely touched upon here), that is when it becomes crystal clear that Occult Chemistry and quantum theory are saying the same thing. They are practically identical descriptions of the nature of physical matter. There is only one conclusion available to us and that is; *somehow or another, Besant and Leadbeater were capable of perceiving the fundamental nature of matter using occult means.*

This is not trivial. As a matter of fact, Occult Chemistry as interpreted from Dr. Phillips' point of view is probably the most important scientific event to have ever occurred in the history of modern science; *the actual scientific vindication of the existence of psychic abilities and therefore, of the occult world-view.* In our present culture with its complete skepticism of the reality of psychic abilities, who would have ever thought that their existence would have been displayed in such a fashion? It is an extremely surprising and unexpected situation.

In these regards, Dr. Phillips himself addresses the parapsychological ramifications of Besant and Leadbeater's Occult Chemistry, in particular, and of the use of micro-psi in general. Micro-psi is an unknown ability to parapsychology, though well known for thousands of years to the practitioners of yoga. However, we shall see that other sectors of modern science have as well rediscovered this ability known as micro-psi, or anima, these being the more esoteric fields of psychology that study altered states of consciousness, notably hypnogogic states and drug-induced states. What we will see is that this ability, and in general, all psychic abilities, are much more common place than normally thought, though their significance has not been widely recognized. In chapters 12 and 13 I will present my own personal firsthand account, and those of other investigators as well, of the utilization of micro-psi. One of the main themes to be discussed in the next section is that the supposed "psychic abilities" of the occultist are in actuality much more common place than what is thought, and that the significance of these occurrences is generally overlooked and misconstrued in the present intellectual climate. The implications that such an attitude has on our present conceptions of both science and occultism will be made obvious as we proceed.

Notes: Chapter 6

¹McConnell, (1987), page 28.

²A discussion by a parapsychologist concerning parapsychology's struggle for scientific legitimacy can be found in Rogo (1987), pages 208-231.

³LeShan (1987), page 79.

⁴See Zukav, (1979) for a layman's account of the EPR debate. A slightly more technical account from a pure physics perspective can be found in Shimony, (1988).

⁵Shimony, (1988).

⁶See for example, Dossey (1989).

⁷Shimony, (1988), pages 50-51.

⁸Ibid.

⁹Leadbeater, (1985), page 18.

¹⁰Hall, (1972), Chapter XIV.

¹¹Karagulla and Kunz, (1989).

¹²Motoyama, (1984), page 257.

¹³Landscheidt, (1989).

¹⁴Monroe, (1971) and Monroe, (1985).

¹⁵An element is defined by the number of protons it has. The weight of an element is approximately the sum of its constituent protons and neutrons. When two atoms have the same number of protons but a different number of neutrons, then these atoms are called isotopes of that element. For example ¹²C has 6 protons and 6 neutrons, but ¹⁴C has 6 protons and 8 neutrons; these two versions of carbon are isotopes.

¹⁶Leadbeater, (1987), page 203.

¹⁷Besant and Leadbeater, (1919), page 9.

¹⁸For a look at theosophical attitudes towards occult chemistry throughout this century see Smith, (1982).

¹⁹Phillips, (1980), page ix.

²⁰Dr. Phillips' mathematical model of quark behavior is presented in Phillips, (1979).

²¹Phillips, (1980), page 23.

²²Stephen Phillips has published his mathematical description of the ultimate physical atom (U.P.A) in Phillips, (1983)

²³Phillips, (1980), page 2.

²⁴It is very interesting to note the following statement found in the first chapter of the 2nd edition of *Occult Chemistry*:

"Many physicists, though not all, will resent the idea of treating the ether of space as atomic."

This book was written at a time when physicists generally thought that matter, space and time formed a *continuum*, this being the *ether* of nineteenth century physics. It was the quantum revolution that occurred after 1925 which overthrew this notion in science. Today, matter is thought of as discreet (or "atomic" as used in the quote above). The quote above clearly shows that Theosophical occultists held that matter was fundamentally discreet, and they claimed to know this via direct clairvoyant observation. Science has vindicated this occult claim beyond any doubt. And now one must ask how occultists knew such a thing before scientists did? The only conclusion is that occultists are not lying, nor telling over-exaggerated stories about what can be observed by clairvoyant means.

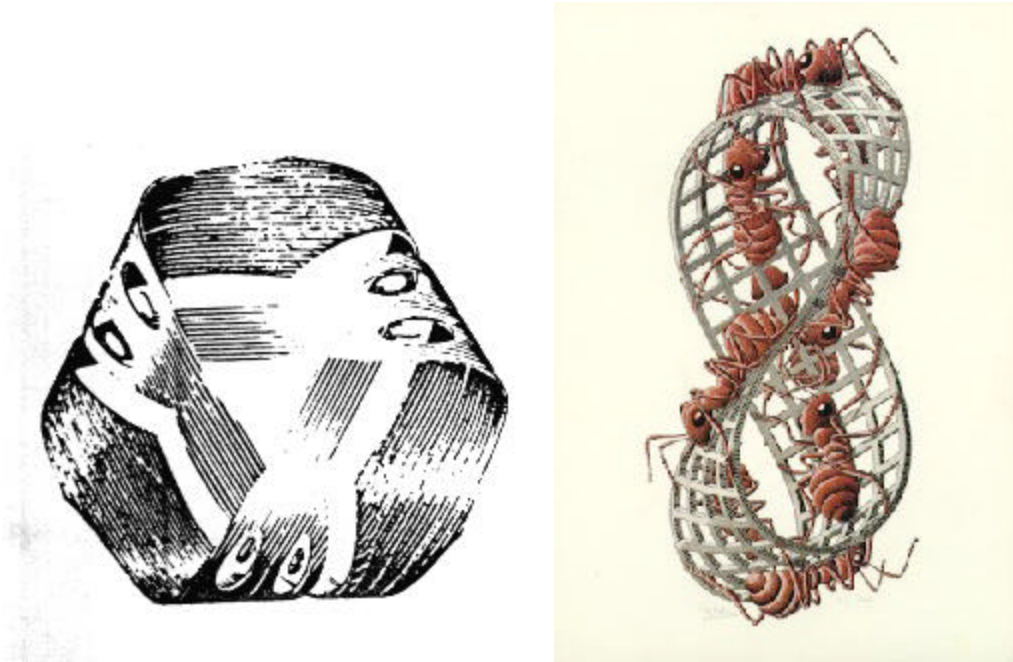
Color Plates

Plate 1. Möbius Geometry, A and B: Both of these Escher wood carvings illustrate the paradoxical form of Möbius geometry. In a very abstract sense, it is by this Möbius geometry that our essentially nonphysical psyches interact with the physical world of our waking experience, and thus produce our egos or sense of "I-ness". See chapter 10 for discussion.

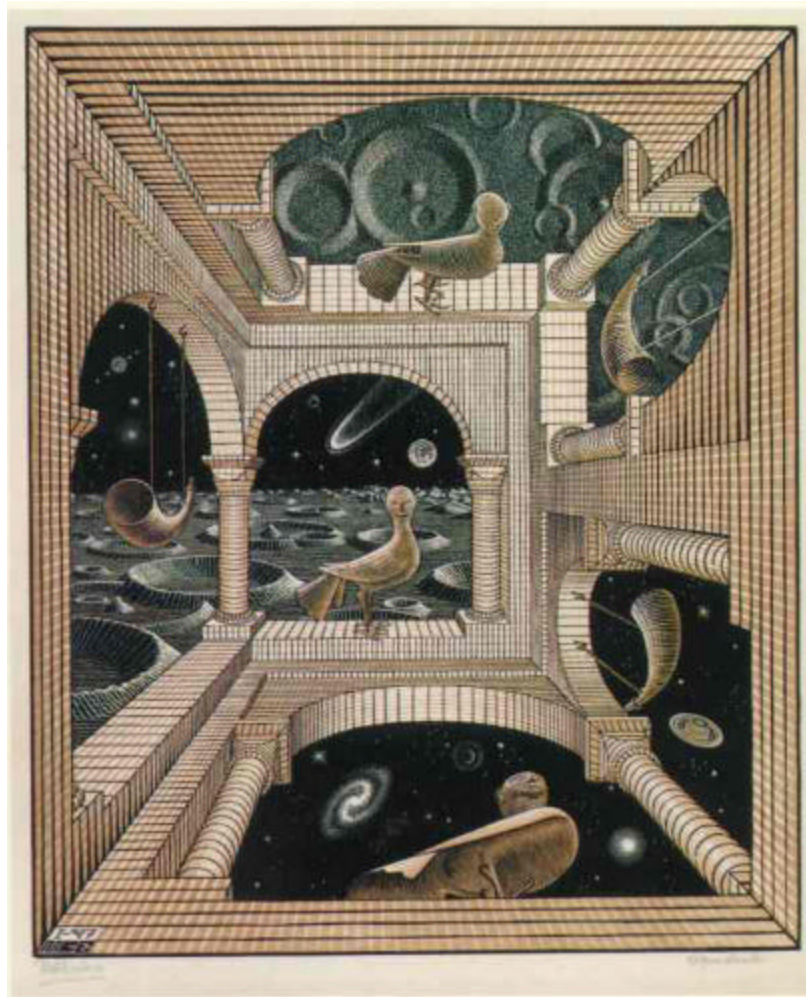


Plate 2. Escher Print: In this Escher wood carving entitled "Another World", we have a visual representation of the geometry of the astral plane as it is perceived by clairvoyant individuals (see quote by C. W. Leadbeater on page 274). Note here the seemingly paradoxical overlap of separate three dimensional spaces to create a geometrical space that is seemingly four dimensional. Such a geometry allows one to perceive a three dimensional object from all sides at once. The seeming four dimensional geometry of this plate is also a key quality of hallucinogenic drug induced perceptions, thus pointing to the similarity of clairvoyant and hallucinogenic induced perceptions.

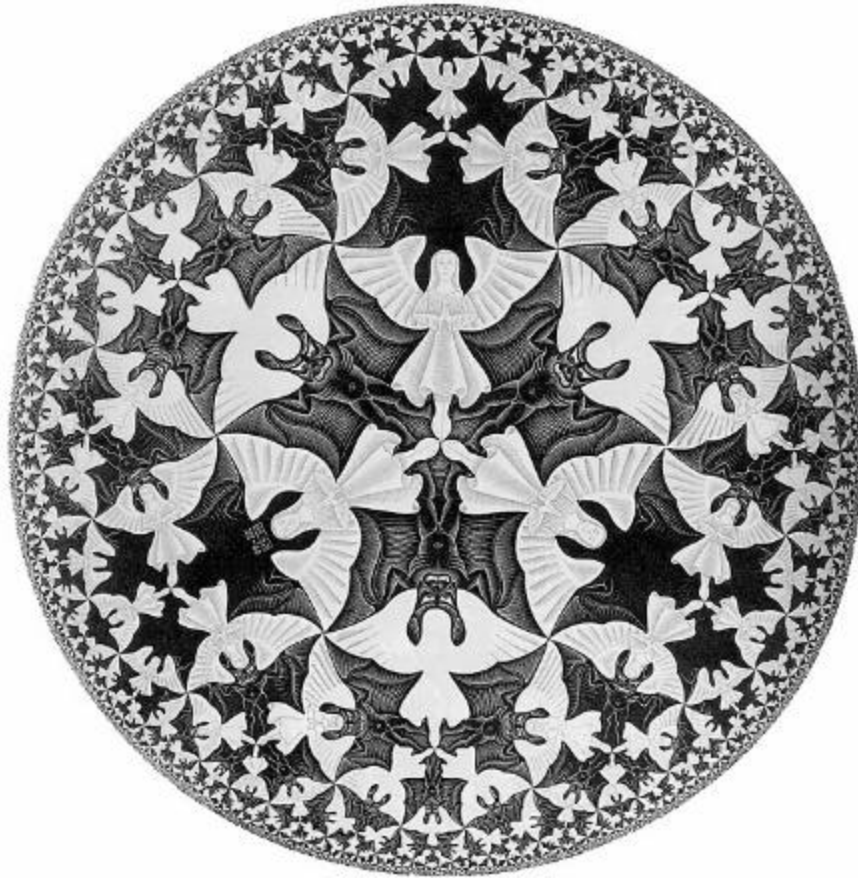


Plate 3. Escher's Circle Limit IV: This Escher engraving entitled "Circle Limits IV" introduces a second common geometrical theme shared amongst clairvoyant perceptions, drug induced perceptions and Tibetan art, and that is the theme of "things within things within things". Here Escher is illustrating the fractal property of self-similarity, or of repeating patterns at different scales of resolution. Occultists refer to self-similarity as the "Hermetic Axiom" which states "As above, so below."

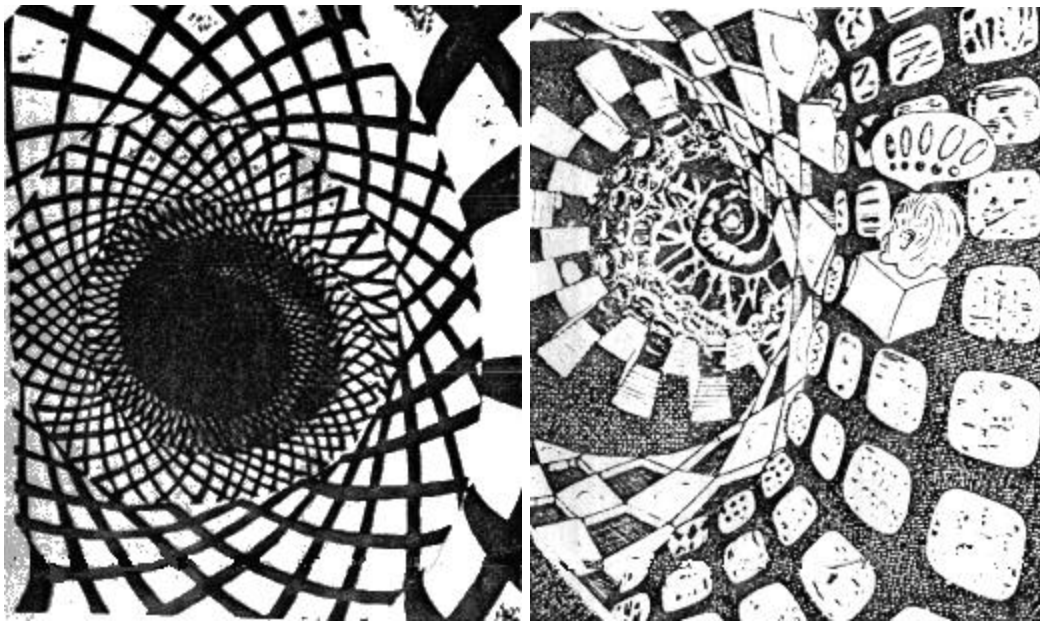


Plate 4. Universal Hallucinatory Images A and B: These two drawings are taken from an introductory psychology book (Davidoff, 1980) and are meant to illustrate "universal hallucinatory images". Such perceptions are very commonly reported by hallucinogenic drug users as well as those experiencing epilepsy, psychosis, sensory deprivation, and electrical brain stimulation. The similarity of these images in these diverse conditions points to a common source of these "hallucinations". The key theme in these illustrations is that of the "lattice tunnel" which is essentially a dynamic spiral induced sense of depth or perspective. This is an element very common to fractal images, though the sense of perspective in a fractal is an illusion created by the self-similar nature of the fractal curve. Compare this plate to the previous Escher plate and the two following plates of fractal images to see the overwhelming similarity of these forms.

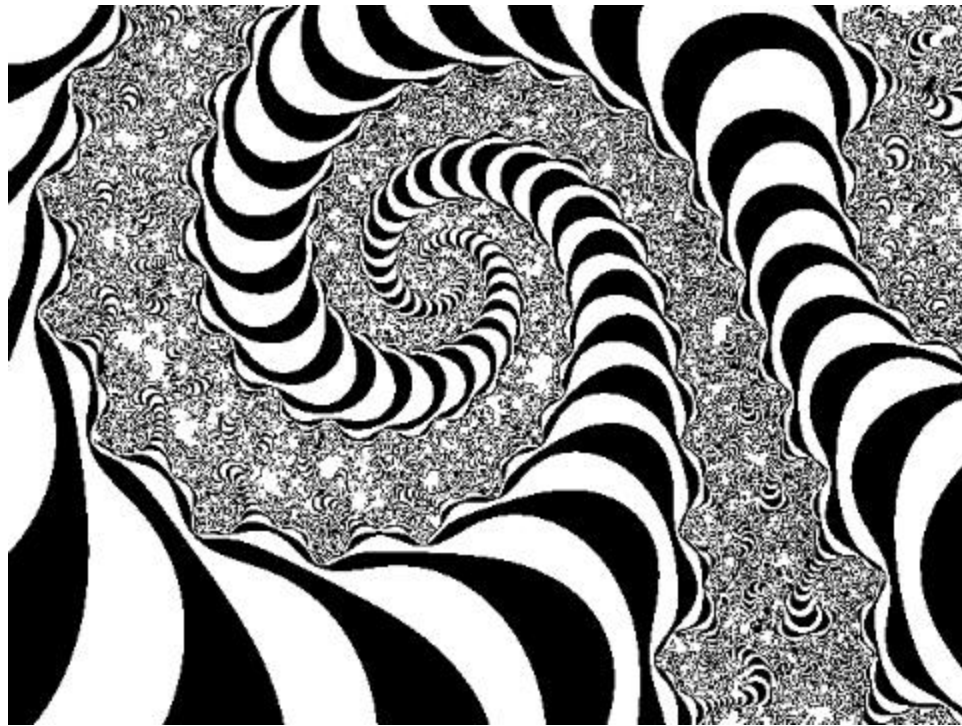


Plate 5. Equipotential Curves of the Mandelbrot Set: This illustration displays the boundary of the Mandelbrot set at a magnification of approximately 100. Note the visual motifs that repeat at progressively smaller scales. This is the property of self-similarity. The inherent construction of these motifs causes a false sense of depth or perspective in the fractal curve, creating the illusion of dynamic and spinning spiral depths. This figure is very similar to the previous figure illustrating "universal hallucinatory images". The similarity of hallucinogenic images to fractal curves points to the fractal nature of these so-called "hallucinogenic" images.



Plate 6. Tantric Mandala: This illustration is of Tantric Buddhist origin and was produced in the 20th century. It depicts the Bodhisattva Avalokitesvara at the center of the mandala (see caption to Plate 10 for a description of this being). This image can be taken as a representation of the imagery perceived by occultists in altered states of consciousness. As such, it is a representation of the geometry of a nonphysical world. Though not obviously possessing the dynamic spiral sense of depth common to fractal images and hallucinogenic perceptions, the circular mandala form of this picture is highly suggestive of this quality. Note also the similarity of the geometry of this picture to the geometry portrayed in the Escher print of Plate 2. Both this plate and Plate 2 suggest the "overlapping" of three dimensional spaces to form a four dimensional space which allows many three dimensional spaces to be perceived simultaneously.



Plate 7. Tantric Architecture: This plate shows a photograph of a Tantric Buddhist temple (the Naypola Temple) at Bhatgon, near Katmandu. Even in architecture, this occult sect attempts to display the geometry of the nonphysical worlds. Note how each higher floor appears as a smaller replica of the previous floor. We see here also a definite attempt to portray self-similarity in the fine detail of the temple's decorations. This architecture is attempting to capture the self-similarity of the fractal-like spaces of the nonphysical worlds. As well, this architecture, like the Escher print in Plate 2, suggests how the nonphysical worlds could be a four dimensional fractal space in which three dimensional spaces repeat themselves in a self-similar fashion.



Plate 8. Hindu Statue: This is a Tibetan statue of the Bodhisattva Avalokitesvara. Again, we can take this piece as a representation of occult perceptions of nonphysical worlds. According to the myth of Avalokitesvara, when he doubted his vow to Bodhisattva-hood, his head exploded into one thousand pieces. When, with the aid of sympathetic buddhas, Avalokitesvara's head came together again, "he was eleven headed and looked in all directions", (Trungpa, 1975). Is this perhaps a description of the awakening of this individual's latent ability to perceive the nonphysical worlds? Such an interpretation seems highly likely. Again, note in this image the self-similar repetition of the statue's head creating a fractal-like pattern of three dimensional spaces.



Plate 9. Meme Bacteria: This is a copy of the author's original wall tracing of the highly dynamic images of hallucinogenic drug induced visual perceptions. The purple-red creatures appeared to look like highly mobile (or "motile") bacteria, and the green tubes in which they appeared to swim were constantly breaking apart and reforming connections with one another. The green tubes were highly transparent and one could see through many of them simultaneously, creating extremely complex visual perceptions, but this effect is not captured here. Here we have three tubes side by side. The first tube on the left portrays only the "meme-bacteria" that were present within that tube. The other two tubes to the right show how meme-bacteria from tubes behind those portrayed here could be perceived through the transparent walls of the front tubes.

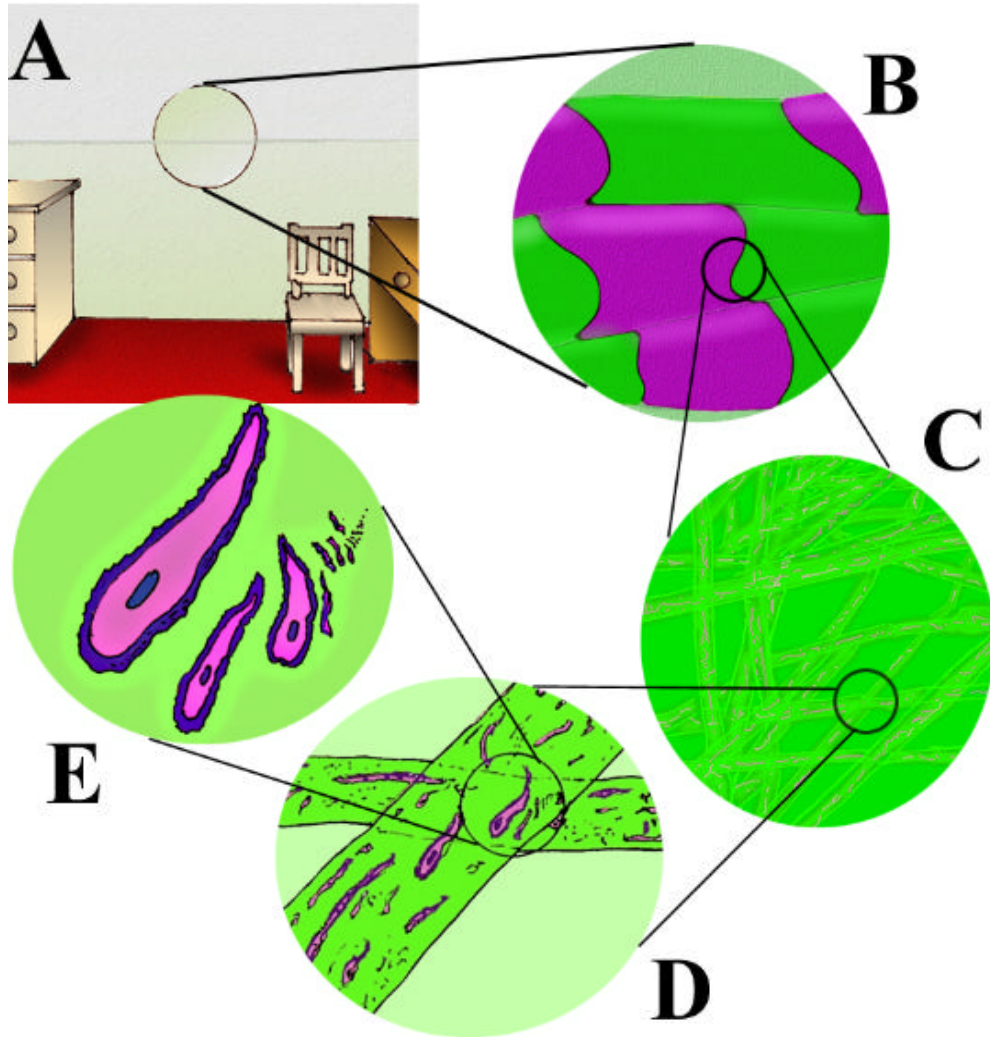


Plate 10. Meme Bacteria Blow Up: These five vignettes represent the causal connection between five different visual levels perceived under the influence of hallucinogenic drugs. In A is portrayed a room as it would be seen "normally". Frame B illustrates how apparently blank white walls were actually perceived to be formed from large, transparent and neon green tubes with a purple liquid flowing through them. As well in frame B, an attempt is made to show the "grainy" nature of the wall above and below the three tubes. This "graininess" was superimposed over the large green tubes, though I have not portrayed that here. Frame C shows that each tube was actually composed of a very complex arrangement of much smaller green transparent tubes, and it was these smaller tubes that constantly made and broke connections (were "labile") with one another. Frame D shows that a close inspection of the labile tubes of frame C revealed the presence of highly mobile, bacteria-like creatures. These creatures alternated between two states: they were either locked into place in such a way as to correspond to the shapes of the "normal" objects in our visual field (for example, the objects depicted in frame A), or they were observed to be free swimming, very much like schools of fish. In frame E we have a close-up of these bacteria-like creatures, or "meme-bacteria", showing that they all possessed a well defined structure (morphology). It can be seen that each meme-bacteria was enclosed in a textured, dark-purple coat, and this coat enclosed a pink-purple medium that appeared homogeneous. Within this homogeneous pink medium was observed a dark-purple, homogeneous body that was taken for a nucleus. As well, frames D and E (as well as Plate 11) illustrate the types of patterns formed by groups of these "meme-bacteria", and the large variation in their sizes. It is the author's contention that these levels of drug induced visual perception are actually direct perceptions of actual levels of biological organization. See chapters 12 and 13.

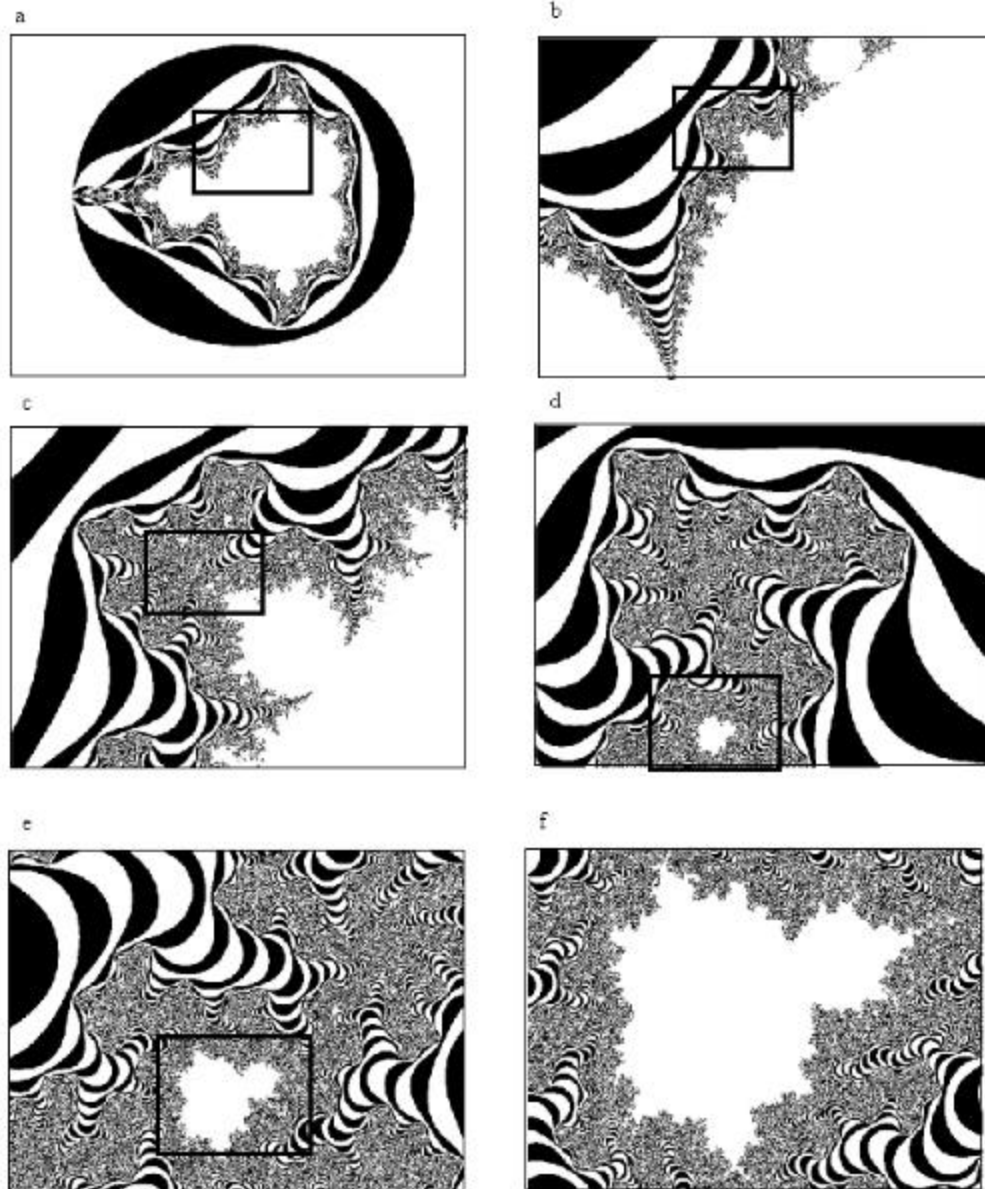


Plate 11. A Fractal Zoom: This plate illustrates the fractal zoom process. Fractal zooming is when one progressively magnifies the detail of a fractal curve, producing finer and finer degrees of resolution. A fractal zoom takes us on a journey through the visual beauty of the fractal curve, eventually only to end up seemingly back where we started. But it is not the starting point, only a repetition of our initial pattern at a finer degree of resolution. This is another example of the self-similarity of fractal curves. As well, this process illustrates fundamental properties of the mind, and in general, of the motion of nonphysical objects through nonphysical spaces. See chapters 12 and 14 for details.

SECTION TWO: A Scientific Interpretation Of Occultism

In section two we will begin to analyze the meaning of the concepts presented in section one. Here I will give a critical evaluation of the claims of occultists and the relevance of these claims to modern science. We will also explore in greater depth some of the metaphysical and philosophical differences between the scientific and occult world-views. The main emphasis of this section will be an interpretation of occult claims in terms of our everyday lives. As well, we will begin to sketch out the foundations for a unification of scientific and occult world-views. We will go into detail displaying the similarities and fundamental compatibility of scientific and occult notions. This section will illustrate the claim that occultism, when interpreted in scientific terms, opens up vast new dimensions of scientific inquiry.

Chapter 7. Occult Means Of Perception

The major claims of occultism can be summarized thus:

1. There are nonphysical worlds.
2. Human consciousness can and does operate in these nonphysical worlds to various degrees and extents.

I have already stated that the validity of the incredible and marvelous claims of occultism rest upon the reality of the siddhis. Through our previous discussions we have already developed a decent understanding of the nature of the siddhis. We have seen that the siddhis involve the perception of the nonphysical worlds, and that these enhanced modes of perception are brought about by the awakening of the chakras. And we have already seen examples of the use of these siddhis in the work of Besant and Leadbeater, Dora van Gelder Kunz, and Robert Monroe.

I would like to spend this chapter commenting on the nature of the siddhis from a less occult perspective and attempt to pin down in a more precise and accessible fashion just what is really going on here: what psychic abilities or siddhis are really like in terms of the subjective experience, and how our normal consciousness is related to these abilities. Perhaps by showing how many of the facets of normal circumstances in our everyday experience are related to these so-called psychic abilities, it will become more apparent that occult views are self-validating and essentially correct descriptions of human experience and constitution with respect to the major claims of occultism.

Let us begin by discussing the notion that psychic abilities are extensions of normal human faculties. What this basically means is that normal humans already possess psychic abilities¹. What are the psychic abilities of normal humans? Basically, all of the nonphysical attributes of human behavior are psychic abilities. We think and imagine, feel emotions and physical sensations, we perceive our environment, and we dream. These are indeed psychic abilities. Yet these behaviors are so common we do not think of them as such. And on the other hand, we mystify the possibility of out-of-body travel or telepathy.

What we are really dealing with here are attitudes and misconceptions. The common belief and attitude is that, on one hand, there are "normal" behaviors like thinking, feeling and dreaming. On the other hand, it is commonly believed that psychic abilities such as mind-reading, fortune telling and OOBes are not normal and are somehow magical and mystical. We associate a mystique with these latter behaviors that we do not with the more common behaviors. Yet it must be realized that, even within the occult context, this distinction is arbitrary, mostly meaningless and grounded in baseless misconceptions. Given this dichotomous attitude we have essentially two choices: we can either see our normal psychological behaviors of thinking, feeling and dreaming to be just as mysterious and magical as out-of-body

experiences and clairvoyance, or we can accept the seemingly unusual abilities to be just as normal and commonplace as our everyday behavior.

I think it is instructive to dwell on this dichotomous attitude. Just how and why has this distinction come about? Why are thinking, feeling and dreaming considered normal and nobody blinks an eye over them, but OOBes, for example, elicit suspicion, incredulity and disbelief? If I were to say to you, "I'm thinking a thought right now", nobody would even care. But if I said that I traveled to the astral plane last night, or that I can see your aura, then depending on who I'm talking to, I might be deemed insane or turned into a celebrity.

It's interesting to observe how different classes of people react to the notion of, say, having an OOB. I've personally noticed that uneducated (university uneducated that is) people tend to be mystified, but accepting, when confronted with these types of claims. The more educated people are however, the less likely they are to accept the possibility that these types of events are real. Apparently the educated people know better and the uneducated ones are just credulous. But I think the "educated" people have been so thoroughly conditioned by the legitimate educational system, into its definitions of what is and is not real, that they are incapable of seeing something that is right in front of their face unless it fits into standard definitions. This is quite an ironic situation. The myths of the peasants turn out to be real; what could be a worse nightmare to the university professor?

Still, there are very good reasons for this dichotomy of attitudes. First off, generally speaking, the uneducated *are* credulous with regard to these types of matters. This is one of the main reasons occultism has the bad reputation it does in our society. Secondly, and most importantly, this dichotomy exists because, in spite of the relatively frequent occurrence of so-called inexplicable psychic events, the legitimate and educated sector of our society is not only uninformed about the widespread occurrence of these types of events, but as well has no clear means of conceptualizing them. I will discuss this latter point from other perspectives elsewhere.

Having pinpointed the attitudes surrounding normal and unusual psychic abilities, I will now attempt to show the actual gradation between normal and unusual psychic abilities. We will now look at some examples in which the above dichotomy applies and attempt to dispel this dichotomy and replace it with a more equitable understanding.

Let us begin by considering an example: a typical parapsychology experiment designed to show precognitive abilities, in which a subject is asked to guess the order of cards in a deck. The parapsychologist will record the number of right guesses and then calculate the probability that these guesses were due solely to chance. Then perhaps the results were such that the odds were one in one thousand that the subject's guesses were due to chance. The parapsychologist would then take this as evidence for precognitive abilities. Unfortunately, psychic abilities do not work this way. All the experimenter proved is that one can measure a statistical fluke. The fact that there was an intention present in the subject's mind--the intention to guess the order of cards in a deck--prevented the subject from even being open to the possibility of any real type of precognitive event. True precognition is a holistic event requiring both mind and emotions, and is always context dependent.

Here is a better illustration of a precognitive event: Let us say that during our above experiment the subject noticed that the experimenter was a bit pale, and seemed unusually tired. The thought passed briefly through the subject's mind that perhaps the experimenter is coming

down with a cold or something. Then, two days later, completely unknown to the subject, the experimenter is in bed with the flu. Indeed, the subject saw the future! Thus, by all rights this was a precognitive event. "But it is only common sense" you say. There was nothing particularly unique or special about the subject's surmising that the experimenter was unhealthy. But the point here is that this is the essence of precognition. The subject, in the context of the situation, saw the situation for what it was, and intuitively saw where the situation was going. Furthermore, it took no effort or intention on the subject's part. Had the subject *not* been so preoccupied by the experiment he or she might have recommended that the experimenter go see a doctor.

This first example illustrates many of the factors involved not only in the actuality of psychic abilities, but also how our dichotomous attitude about them and lack of clear comprehension of them muddles up our understanding of such events. The first important factor to recognize is that the exercising of psychic abilities is *context dependent*. In our example, the context was two people sitting in a room performing a parapsychology experiment. The actual experiment was incidental, the important fact was that it was two people involved in some type of activity. And from one person to another, the subject saw that the experimenter was not feeling well. Often however, the person experiencing true psychic events may not even realize the context in which these events are meaningful.

Secondly, *psychic abilities occur spontaneously* (at least at the level that normal people experience them), they cannot be forced. Our subject quite automatically and intuitively recognized the experimenter's condition in spite of other pretenses that may have been operating.

Thirdly, psychic abilities manifest within and through the totality of the subject's awareness, they can not be turned on or off like a machine (again at the level normal people experience them). As a corollary to this third point, the development of any type of psychic ability is gradual, like learning to play a musical instrument for example (an apt example in that developing psychic abilities is like learning to play the body/mind as if it were a musical instrument!).

Such occurrences as illustrated in the above example are so common place, and happen to us so frequently that it seems silly to think of them as psychic abilities at all. The normal social concept of precognition is one in which astrologers predict impending disasters for Hollywood celebrities in the tabloids. This latter attitude is simply a media induced misconception. But even in spite of such silly mass popular notions as this, the misconceptions even continue to more refined levels.

The above example illustrates the essential absurdity of the present attitudes and misconceptions about psychic abilities possessed by those who claim to seriously study such things. The parapsychologist in our example has decontextualized the situation by creating an artificial environment that does nothing other than reveal the parapsychologist's metaphysical assumptions about life. In this environment he assumes that man can be studied in a test tube and treated like a rat in a cage. Such an approach may have a type of validity for chemistry and physics, but systems as complex as human beings cannot be so dissected without destroying that which one desires to study. Parapsychologists are artificial. They do not realize (as occultists do very clearly, as we saw with Leadbeater, for example) that the entire world of

human behavior is their laboratory. Furthermore, such a front only dampens out the real subtleties involved in the study of psychic occurrences. The reality of the situation is that one cannot attempt to objectively study psychic abilities without developing one's own psychic abilities. It is inherently a participatory exercise. One simply cannot abstractly decontextualize the reality of psychic abilities from one's everyday life and experience.

From the occult point of view, even the issue of the siddhis as an extension of our "normal" nonphysical behaviors is a sticky one. On the one hand, occultists often downplay the use of psychic abilities and consider them a hindrance to the greater goal of achieving "enlightenment". In this context, siddhis are seen to be by-products of meditative practices, and it is taught in the occult that these can often serve to mislead and confuse the student.

On the other hand, in Theosophical occultism, one encounters the attitude that it is impossible to prove the existence of the siddhis to those who do not believe in the existence of such things. I do not believe this is a valid attitude. This attitude is basically a defense mechanism on the part of occultists in the face of a culture that grants no legitimacy to the occult in the first place. The issue is not proving the existence of psychic abilities; the fundamental issue is one of paradigms or world-views. Modern paradigms, especially those of science, simply do not include psychic abilities as a component of their world-view. What we are dealing with in the occult attitude that claims that one cannot "prove" the existence of psychic abilities is the equivalent of trying to fit a square peg into a round hole. If a paradigm or world-view does not accept occult realities, then no amount of proof or disproof is going to change this fact. Attempting to "prove" that psychic abilities exist within this context is sheer folly. This is a situation that Thomas Kuhn describes in great detail; the inability of different paradigms to communicate. This process Kuhn called "communication breakdown" and it refers to the fact that people with different paradigms do not communicate, but actually speak right *through* each other. This is because each camp gives different meanings to the same words so each interprets one another, not accurately, but hearing only what one wants to hear. Thus, I suggest occultists do away with this attitude that one cannot "prove" the existence of psychic abilities and instead recognize that occultists see and describe a world that includes psychic abilities whereas scientists do not, and recognize that what is really at issue here is the difference between occult and scientific paradigms. Not only will this remove the embarrassment to occultists for always having to "apologize" to scientists for not having cold, hard "proof" of occult phenomena, but it will show a degree of intellectual sophistication on the part of occultists that detractors of occult claims cannot easily dismiss.

Another highly noteworthy point in the example above is that the subject did *not* later on realize that the experimenter did indeed get sick. The idea here is *significance*. Since we have mystified and decontextualized our inherent abilities of foresight to such an extent, we usually do not recognize when we have actually experienced or had a significant and useful insight. Another example in this regard is when we experience a first impression upon meeting a person. We can mystify the occult fact of reading auras. But the simple reality is that we all possess this ability to "read a person's aura". However, our minds are usually so filled with superficial and irrelevant images and we are so little in touch with our own emotions that whatever impressions we do receive from people are ignored or misinterpreted.

All of this consideration leads us to a very important point concerning occult doctrines and the development of psychic abilities. Highly developed psychic abilities, abilities that aptly deserve the label of siddhis, such as the ability to read (or actually, to sense and "feel") auras, see and travel to other worlds, sense the future outcome of events, these are all extremely subtle sensations and alterations of consciousness. In our culture of Hollywood hype and mystique, our stressful and competitive lifestyles, our cold and bland need to one-up our neighbors, the development of true psychic gifts in this type of moral climate is unthinkable. Most of the occult practices leading to the development of psychic abilities are practices that relate to calming the mind and learning how to control thoughts that are like wild bulls (or "chattering monkeys" as is said in Patañjali's Yoga aphorisms), practices related to calming the emotions, practices related to eliminating unnecessary desires that serve no purpose other than to feed themselves, practices of learning to be very open and honest with oneself and one's intentions, and studies that teach and show the intimate relationship between Humankind and Nature.

Without the development of these qualities one simply cannot "tune into" the very subtle sensations that result. Our minds are simply too noisy. Yet we have parapsychologists and New-Agers, both very much a part and product of a culture that espouses values antithetical to the development of true occult gifts, running around dazzling themselves with relatively trivial (from an occult view) psychological events that they have misconstrued out of all reasonable proportion.

And this leads us to an important point that is always stressed in occult teachings and that is, without the qualities described above, any development of psychic abilities is potentially detrimental. We glamorize the possibility of reading minds or seeing auras, or going to the astral plane. But in reality these are not glamorous abilities. If anything, the development of these abilities is a very sobering and disappointing, if not a downright dangerous experience. For we open ourselves up to subjective experiences that are very powerful if we are not prepared to cope with them.

Turning on (or consciously tuning into) our psychic abilities, even to the most minute of degrees begins to reveal to us the hidden undersides of our subjective (and objective or physical) existence. The veneers and facades of our outer existence begin to become transparent, and we begin to see the underlying intents and motivations behind actions and appearances. This is a very scary experience because what one finds is mostly fear and deceit, insecurity and haughtiness. One senses a strange and confused groping towards a goal that is not too clear. And if we probe far enough beyond these underlying motifs, there is simply nothing there at all.

The teachings of the occult prepare the student to cope with these realities both emotionally and intellectually, but even such preparation pales when confronted with the actual realities behind our lives. Thus, if we were to take a normal person and somehow magically turn on all of their siddhis, this person would probably go stark raving mad. To hear all the voices in other people's minds, and to feel the feelings that other people experience, let alone to confront the feeling-scapes and mind-scapes of the nonphysical worlds is an overwhelming, draining and utterly engulfing experience. Luckily, our perceptions are as narrow as they are given our present views of ourselves and of Nature.

Let us consider another example of psychic abilities now, that of mind-reading or telepathy. Consider the following standard conception of telepathy: A parapsychologist may

have one subject sit at one location and view paintings while a second subject at another location tries to read the first subject's mind and describe the content of the paintings². This type of an approach to "mind-reading" is so far removed from anything that is real that it simply is not worth addressing.

Here is a hypothetical example of *real* mind-reading: A mother has been having problems with her delinquent son. She comes home from work one day and finds the money in her drawer missing. She questions her son about the money but he denies taking it. The mother knows he is lying. A second example: A couple sits at home watching TV. For the fifth time that evening, the commercial for the Time-Life books on Supernatural and Unexplained Phenomena comes on, and simultaneously they both say, "Not this again!". A third example: Johnny is a fourth grader, and his teacher is at the board explaining long division and Johnny understands. A fourth example: The husband walks into the house and he is unusually cheery. The wife thinks that something is up, and he gives her a box of candy and flowers because he happened to be in an unusually good mood today and thought it would be nice. A fifth example: Two children at the beach build a sand castle together. A sixth example: Two people are arguing on a street corner. A third person walks by unnoticed and unaware of the two arguers, but begins to think negative thoughts. A seventh example: The disciple goes before the Zen Master and asks, "Master am I enlightened yet?", and the Master says, "No". Now *these* are examples of mind-reading.

From the mystique and bedazzled point of view, "mind-reading" is some mystical process that, in some nebulous sense, is accomplished when the mind reader goes into another's head and somehow magically "reads" their thoughts. Once again; it simply does not work like this. In the chapter "The Psychological Value Of Quantum Theory" I explain how clairvoyants literally "see" (with their third eye chakra) the thoughts emanating from a person's mental body, and if they are clairaudient then they will literally "hear" (via the throat chakra) the voices in other people's heads. But even these occult descriptions of mind-reading are so incomplete that they are misleading.

The essence of "mind-reading" in the above examples is this: In some sense or another, our minds can be likened to radio receivers and ideas can be likened to radio transmissions. When we think a thought we are literally broadcasting our thought into our mental environment. And there it floats ready for another mind to receive it. *Mental events are experienced in all cases and with no exceptions by some type of mental resonance.*

Let me make this perfectly clear: normal verbal and nonverbal communication (such as the shrug of the shoulders or a smile) could not occur without this resonance process. Therefore, when we say "Good morning" to our neighbors, they are literally reading our mind to understand our intention. When I wave good-bye to someone they are literally reading, or resonating with, or locking onto the broadcast of my mind.

The phrase "good morning" or the wave of my hand are simply outer physical expressions of my thought, of my intent. I think it is very important to realize that words and physical gestures are in some respects simply crutches, or better yet, scaffolds on which to carry meaning and intent. Words and physical gestures are the end product, the *effect*. It is the mental broadcast, the meaning, the intention, that is the *cause*. It is this cause, this intent, that is the essence of communication. It is the intent that is broadcast and conveyed, whether or not it

is received and interpreted as such. Thus, all communication is "mind-reading" in the sense that all communication is sympathetic mental resonance, or to use a more technical term, mental phase-locking.

Now we return back to our dichotomous attitude and ask: why don't we realize that mind-reading and normal human communication are the same thing? There are two levels on which this can be answered, the academic level and the experiential level.

First the academic level; Stated as simply as possible, there is no clear conception of processes of human communication in modern science. No one has it, not the psychologists, not the sociologists, not the biologists. The only ones who have the right (i.e.. applicable) ideas are the physicists but they think in terms of atoms, not humans. These ideas about mental resonance are expressed very clearly in occult teachings, but as such, they are obscured by occult jargon and fail to convey as clearly as they could how prevalent such processes are in our day to day and moment by moment behavior. A synthesis of modern physical ideas about wave behavior with occult ideas of emotional and mental resonance could potentially produce a very clear and useful conception about processes of human communication. This synthesis is discussed in detail in the chapters "The Psychological Value of Quantum Physics" and "A New Concept Of Motion". Thus, the legitimate academia of science doesn't know what human communication is to begin with, let alone to be able to understand this process in the context of "mind-reading", and the illegitimate academia of occultism has not yet expressed clearly enough the equivalence of normal human communication and mind-reading/aura reading.

But there are deeper and more relevant reasons in terms of our day to day experience as to why we do not recognize the nature of how we communicate with others, and what this may or may not have to do with reading other's minds. The basic issue here is being quiet and paying attention. I mean, for God's sake, we *are* human beings. Why do we need some kind of expert, be it a scientist or an occultist, to tell us what we are? If we would only pay close attention to what is going on in our minds and emotions when we communicate with others, then we could understand for ourselves what is going on here.

But unfortunately we don't pay attention. And the main reason for this comes from the very processes that underlie our ability to think and communicate. This resonance process that underlies our psychological behavior is so subtle, all-pervading and effective that we are blinded from it. We are too caught up in the resonances to see ourselves resonate. We are spun round and around in a dizzying cascade of never-ending sensations, thoughts and emotions; pulsating us, scintillating us, gyrating us in our subjective experience. These psychological resonances that I am speaking of are not some dry and bland academic phraseology. These psychological resonances are real, eminently real; they are your feelings and your thoughts, your expectations and desires, motivations, wishes, hopes and dreams, your anxieties and pleasures, your fantasies, the images in your mind, the voice in your head, your attitudes, all the things you know, all your memories, and all the things you think yourself to be. These resonances are your conceptions of right and wrong, and the things you hear on TV, and the things you are taught in school, and all the things you read in books and newspapers, and see in movies. It is your image of mother and father, priest and policeman, our society and all of its definitions, conceptions and creations, all the needs, it is Crest toothpaste and the need to be seen with a

pretty woman, it is dry underarms and fresh feminine protection. It is all the images, images, images, feelings, feelings, feelings that echo day in and day out through all of our minds.

All the content of all our perceptions and subjectivity is the space of these psychological resonances. But it is not a space, for spaces are thought of as empty. No, it is a jungle, a damp, dark, threatening psychological jungle full of strange and exotic thought and feeling creatures. And we are like blind men running about in the darkness of the jungle of our awareness, fumbling from one resonance to another. Luckily at times we sleep, then more luckily we eventually die. And that is why we say "God rest his soul", because after a psychological roller coaster ride like this one, our souls are ready for a rest.

All these things are the essence of our subjective awareness and these things are the psychological resonances of which I speak. And we are so blinded by them, so preoccupied with them, and so hypnotized by them that we do not see them for what they are. Instead, we do the exact opposite, we believe in these things, and we identify ourselves with them and define ourselves by them. We do not identify with the bacteria that live in our skin, yet we identify with the thought-germs that live in minds and emotions. And because we do so, we never understand truly the processes that underlie our subjective behavior. And most importantly, we never come to realize just what we really are underneath these dizzying psychological resonances.

It is not really accurate to say that we identify with the mental resonances themselves or that we are even really aware of them. Instead we are caught up in the effects of these resonances; the images, thoughts and words that result from our intentions. This is form at the expense of substance and it is the image that sells us. We buy the prettier box on the shelf, and if we don't have enough money then there's always a reasonable facsimile at a cheaper price. The result of this preoccupation with form is that we will sit and argue about useless semantics instead of penetrating through to straight answers. It's more important to memorize the equation than to understand what it means. It's more important to get good grades than to really learn what you are being taught. It's word length and not content that is important to us.

These types of attitudes serve to illustrate how little we are really aware of the mind as an organ of intent. We think of the mind only in terms of the images and thoughts that are produced from our intent. Thus we think of mind-reading as the reading of these images and thoughts. But in actual practice, *mind-reading is the reading of intent*. True mind reading has little to do with the actual images in a person's mind, unless it is approached from a clairvoyant perspective, and even in this case, the mental images are still but the by-product of intent. In terms of our every-day ability to "read minds", the images are only the effect of the intent. And often in our culture these images serve only to cover up or mask our real intents. Thus we normally do not see our minds for what they are. So how could we ever hope to be able to "read" another's mind?

Up to this point, I hope I have to some extent been successful in illustrating that our normal subjective abilities are indeed psychic abilities. The two main reasons we don't realize this are; 1. Because we are blinded by the very processes underlying our subjectivity, and 2. Because we have created an artificial dichotomy between psychic abilities and our normal subjective behaviors.

At this point, I would like to extend my discussion of occult means of perception and address the issue of altered states of consciousness. Here I am referring to states of subjective awareness that are somehow different from our normal state of waking consciousness. In the context of "psychic abilities", such states would include the advanced siddhis (i.e. astral or mental "sight"), trance, hypnosis, yogic meditation states, out-of-body experiences, and drug induced alterations in consciousness, and finally, the one altered state of consciousness with which we are all intimately familiar, that of our dreams. Also in this category of altered states of consciousness, some psychologists would include schizophrenia and creative behavior³.

When we look at the claims of Seth or of Leadbeater regarding their abilities to perceive nonphysical worlds to the extent they do, we again are faced with a situation that seems very abnormal. It is one thing to show that the parapsychologist's approach to psychic abilities is based on an artificial dichotomy that has stemmed from the fact that we are mostly blinded by the subjective processes we wish to study, but when we deal with the claims of occultists it does indeed seem that here is an altogether different mode of perception from anything we "normal" people encounter. Most of us do not talk to nature spirits and trees (as Leadbeater did often), nor do we visit and communicate with discarnate entities, nor do we travel to other planes of existence on any regular basis. Or do we?

Again the fundamental issue here is one of attitudes and misconceptions. It is easy to glamorize the claims of a Seth or a Leadbeater at the expense of seeing how what they are talking about is relevant to our normal everyday lives. So we see Leadbeater as something greater than human because he traveled regularly to the nonphysical planes. But we also travel regularly to the nonphysical planes, except in this case we call it "dreaming". Perhaps we have had a dream about a deceased relative, or a dream in which we talked to an animal. Well, if this was the case, then it would be quite fair to say that *you* have traveled to the astral plane and communicated with discarnate entities and nature spirits. It all lies in how we interpret the event.

It seems to me that the real reason we make the distinctions we do between ourselves on one hand, and someone like Leadbeater on the other hand, is because we fundamentally misinterpret what someone like Leadbeater is saying. We misinterpret what he means. When we dream, we are in the astral plane. You have a crown chakra too, and it opens at night when you are asleep and you leave your body and go to the astral plane. But we don't interpret Leadbeater like this. Instead we glamorize Leadbeater and his abilities. We make Leadbeater a celebrity and fail to see in ourselves what he is describing. Or we see a Leadbeater as a complete charlatan and dismiss his claims as nonsense.

I honestly do not understand why people have the need to create celebrities and charlatans. Perhaps it has to do with insecurity. Are we so insecure that we need to project our fantasies of what we want to be, or our fears of what we might actually be onto others? It seems to me that this might have something to do with why our culture does not in general understand altered states of consciousness, and then makes a big deal (be it positive or negative) out of those who do.

If there is a reason to respect individuals like Leadbeater, it is because they are trail blazers opening up for us new and wider vistas of experience. Such people serve as models displaying to us new attitudes that will allow us to cope with the actuality of the depths of our unconscious and consciously repressed experience.

Again, the bottom line to developing a clear understanding of the more extreme occult means of perception is to first expose our attitude and misconceptions about these abilities. Then, when we have put the issue in a more reasonable perspective, we can discuss the subtleties involved. Now that I have exposed the general attitudes that seem to surround our conceptions of altered states of consciousness, let's turn to a more reasonable discussion of this subject.

Indeed, we all experience altered states of consciousness, at the very least within our dreams. And what I began to discuss above is that, when we deal with the claims of occultists and their abilities to perceive and interact with nonphysical worlds, what we are dealing with is an issue of degree. A true occultist is someone who has taken the time and learned how to dream and to perceive in a more effective manner. Now what does this mean?

From an occult point of view, altered states of consciousness are explained in terms of human nonphysical anatomy. The altered states of consciousness that one can be taught to achieve through occult practices (i.e. yoga or ritual magic) are explained as occurring because consciousness leaves the physical body and enters into the nonphysical worlds via the nonphysical bodies. Examples of this process include trance, meditative states and out-of-body states. All of these states are grounded in very similar processes, at least in subjective terms, though there are subtle physiological differences involved⁴. Subjectively, these processes are identical to dreaming, the main exception being that the occultist is paying attention to the properties of the dream world and his subjective states in the dream world. Normally when we dream we do not pay attention to ourselves while in the dream, nor do we attempt to correlate dream events with the events of our waking life, at least not to any serious extent. Mainly this is due to our cultural conditioning. In our society we are never taught to do this. Yet an occultist does do these things. The occultist will pay attention to how his or her behavior is different in the dream world and how this relates to waking life. This is the essence of occult means of perception. These are people who take their dreams seriously and attempt to compare experience in the dream world with experience in normal life.

And as we all know, things are different in the dream world. There we can fly, scenes change rapidly and unpredictably, emotions seem to take on a life of their own (as we all know from our nightmares), at times we seem to be able to control things and situations with our mind in ways that we cannot in normal life. These types of observations form the basis for the whole concept of the planes in occult teachings. In the occult paradigm, it is taken as an axiom that the world of dreams is as real as the world of our waking experience, and occultists bring back and record experiences and information they have gathered there.

The bottom line to all of this is that we commonly experience occult states of perception in the act of dreaming. Again we are left with the choice of either mystifying our dream experiences, or realizing that most occult claims are grounded in events as ordinary as our dreams.

Now there is one type of altered state of consciousness left to discuss. I would like to turn to the case of the highly developed siddhis of the advanced yogi. This is a situation in which a person is wide awake (that is, not in any type of trance condition) in the physical world yet is fully capable of perceiving the nonphysical world in a fashion totally removed from anything in normal life. This is a Leadbeater.

To set a contrast, we must realize that in normal life our emotions are our perception of the astral plane and our minds are our perceptions of the mental plane. Yet, there are states of consciousness in which one can literally perceive the astral and/or mental worlds in their full extent as worlds quite distinct though interrelated with the physical world. These are states of awareness in which the astral and/or mental planes are seen superimposed over perceptions of the physical world. This is what the highly developed clairvoyant sees. To understand how this type of clairvoyance compares to our ordinary perception of these planes via our emotions and minds, imagine that you are blind-folded, have ear-plugs in so you cannot hear, and you are tied up and cannot move. Needless to say, such a condition would create a very limited perception of the physical world. Now, this is what our emotions and mind are compared to the clairvoyant perception of the astral and mental worlds. Compared to the advanced clairvoyant, we are literally blind, deaf and dumb on the astral and mental planes.

It seems that there is absolutely no precedence in our physical experience which would allow us to understand the nature of highly developed clairvoyance, except the writings and claims of those who have developed such skills. At this point I will simply state that there are certain drugs available which mimic features of this degree of clairvoyance. This is such an important topic with regard to the relation between science and occultism that I have devoted two entire discussions to it in the chapters "Biological Perceptions" and "A Synthesis Of Science And Occultism In Light Of Modern Neurosciences". Here the reader will find this topic thoroughly discussed. I mention it at this point simply to give a complete overview of occult means of perception.

To conclude this discussion of occult means of perception, I think the essential factor we must realize is that it is our misconceptions of these phenomena, and the fact that these phenomena are so prevalent that they blind us, that makes us see them in the light we presently do. These abilities that occultists speak of, so-called psychic abilities, are in actuality primarily extensions of things we do very naturally in our day to day subjective behavior. There is one exception to this, the case of highly developed clairvoyance, and this is discussed ahead.

So, as I said above, with regard to this issue of psychic abilities and occult means of perception, we have essentially two choices of attitudes we can take on the topic. We can either come to see these phenomena as being "normal" in the same way that we see our day to day subjective behaviors as normal. Or we can come to view our inherent subjective abilities of thinking and sensing and feeling as being just as magical and mystical as the ability to read minds or sense the future. I honestly think both attitudes can be held at the same time.

Notes: Chapter 7

¹For a technique book on developing clairvoyance that is grounded in the supposition that psychic abilities are extensions of our normal psychology see Opheil, (1982).

²This is an actual parapsychology experiment from the literature. I can't remember where I read it though, which is probably better off for all of us.

³Mavromatis, (1987).

⁴The physiology of altered states of consciousness is very involved and technical, thus I have not dwelled on it to any great extent here. Some discussions that are pertinent can be found in Wallace, (1973) or Motoyama, (1984) (physiology of yogic meditative states); Mavromatis (1987) (physiology of hypnogogic, dream and meditative states); Aaronson and Osmond, (1970) (physiology of hallucinogenic drug induced states); Freeman, (1991) (physiology of normal perception in terms of chaos theory); Van Woerkom, (1990) (speculative hypothesis on the biochemistry of hallucinogenic drug states and schizophrenia).

Chapter 8. What's In A Name?

In the previous chapter I mentioned the generally dichotomous attitude our culture possesses towards psychic abilities and occult phenomena. The extent to which I outlined this attitude was to say that this dichotomy exists because the legitimate and educated sector of our society has no clear means of conceptualizing occult realities. I was careful to use the term "clear" here, because certain sectors of learning in our society do have means of conceptualizing occult events.

On one hand, there is the science of parapsychology. I have already stated that parapsychological thought is highly biased towards conceptualizing occult events as unusual. On the other hand, there are those in the medical and especially psychiatric disciplines who may not infrequently encounter cases and patients who are experiencing occult realities to some extent or another. In these types of cases the events are not seen as "paranormal" but are usually considered to be "pathological" to various degrees. At the other extreme is the psychological study of the rare genius who has the ability to perceive and sense order and relation where no one else has. These are the sectors of modern science that frequently deal with events with which occultists also deal.

What I would like to do in this discussion is a comparative analysis of the paradigms used by parapsychologists, the medical oriented sciences and the occult with regard to one specific form of psychic phenomena. The purpose for such a discussion is to clarify vividly the underlying assumptions within the world-views, or paradigms, of these three groups. The phenomena we are to focus on has many names: astral projection, out-of-body experience, or lucid dreaming. As is the tenant of this discussion, each of these names embodies completely different contextual elements and metaphysical assumptions.

What is an "out of body experience"? The best answer to this question is to learn how do it and find out first hand. However, it is not my intention here to discuss methods of obtaining the experience, there are good books available on this topic¹. What I would like to discuss at this point are the various names given to this experience and the bearing these names and labels have on how we conceptualize the fact of this activity.

Some call it "astral projection", others say "out-of body experience" (which they can acronymize as OOB, apparently to lend some type of scientific air to their description). Also common is the term "lucid dreaming". These are the three main terms one hears, so these I shall focus on. I want to begin by discussing each of these names and attempt to reveal the hidden implications in each term.

The oldest term in use to describe these experiences is probably "astral projection". The term "astral" is attributed to Paracelsus, and means "of the stars". This term is used to describe the second of the seven planes because of the self-glowing appearance of the objects that exist on this plane. Like the stars, astral objects appear to be glowing or self-illuminated.

This term is increasingly less fashionable to use nowadays, being replaced by the other two listed above. Likewise, the term "clairvoyance" is being replaced by the term "remote

viewing". I think this is because "astral projection" or even "clairvoyance" are too occult sounding. We have already seen how parapsychologists tend to dislike being classed along with occultists. Apparently the sentiment is, if they change the name of the phenomena then they have eliminated any associations with the occult. Yet, whatever we call the experience doesn't matter. The experience exists and we are forced to understand it somehow.

Let us first look to the term "astral projection" and discern what world-view is behind it. The term "astral projection" is the one commonly used by occultists. As we have seen in our survey, occultism speaks of other, nonphysical worlds. Astral projection, as a description of the experience, assumes or implies that whatever is going on is occurring in a world different from the physical world. That is, whoever it is having the experience, is actually experiencing a different world. The astral projector has left behind the physical plane and projected into the astral plane, or one of the other planes- etheric, mental, etc.. The term astral projection is a catch-all term meant to imply that one who is a physical plane inhabitant has temporarily left and traveled in one of the nonphysical planes.

One implication of the occult view that is within the scope of our current discussion, and was touched on in the previous chapter, is that it allows us to at least put our dream experience on the same level as our waking experience: both are projections of ourselves into the appropriate planes. What I'm saying is that occultism offers an alternative definition for the phenomena of dreaming. And though at this point it may seem a fantastic and perhaps fantastically unbelievable perspective, we shall see that, as we proceed with our questioning, it becomes a progressively more tenable alternative. In this view, our dreams become no more or no less real than our usual waking life. If anything, it is a more equitable and democratic view of our experience as conscious beings. And such a view will inherently reveal its own limitations, for when we begin to take our dreams seriously (or perhaps not take our waking life so seriously) we will begin to see and understand the relative relationship between our normal and dream consciousnesses.

The main implication of using the term "astral projection" is that it implies an occult view of the experience; the astral projector leaves the physical world and projects into the astral world. And the deeper implication is that the physical world is not the only world available to our consciousness, but that other worlds, best defined as "nonphysical" worlds, exist and are comprehensible to our consciousness. The term "astral projection" is difficult in that it implies an understanding of the complexities and subtleties of the occult world-view.

Let us now go on to the other terms for this phenomena. Instead of calling the experience an "astral projection" let us call it now a "lucid dream". This term implies a whole different mind-set. To call the experience a lucid dream means we are aware that we are dreaming while within a dream. Lucid dreams are in contrast to our normal dreams in which we are neither aware of the fact that we are dreaming while we are in the dream, nor do we possess the same degree of conscious awareness that we have in our normal waking state. The lucid dreamer is aware that she is dreaming and usually possesses the faculties of her waking mind to a much greater extent than the normal dreamer.

The concept of the lucid dream is simpler in its implications than was the occult view. The implications to having a lucid dream are cleaner, making it easier to relate to within the context of commonly held notions of reality. We have all had the experience of being in a

nightmare, realizing that "I'm only dreaming", and waking ourselves up before we are engulfed by impending danger. Very simple. We all dream and we can relate to the concept of being aware that we are dreaming while within a dream. There is no mention of other worlds or occultism or any such metaphysical things. When we refer to the experience as a lucid dream, we have made it a safer and more comfortable experience, one that fits into concepts that we know and understand, one even that can be relegated into the domain of Freud or Jung. The experience becomes one of archetypes or repressions. Something that can be dealt with cleanly, clinically, and simply on the psychiatrist's couch.

To one who thinks of the experience in terms of science, occultism, philosophy and mysticism, this is not a very acceptable definition. All the really exciting implications get lost in the wash. The sheer drama of the experience gets lost when we turn the astral projection into a lucid dream, and our dreams themselves ultimately get relegated back to the domain of the normal and the ordinary. The lucid dreamer is not a traveller through mysterious and uncharted realms beyond space and time, whether consciously in the case of the projector or unconsciously as with the dreamer. Such conceptions as this become wish-fulfillment, fancy, the result of too much stress, or they are branded as delusions, and drugs and clinics are prescribed. One may believe such occult things, but the psychiatrist will only nod as he scribbles notes on his pad. The lucid dream is a comfortable thing, one easily handled by the proper medical authorities.

This term "lucid dreaming" implies a mind-set that is not as extreme in its implications as that of the occult mind-set. It is a mind-set of medicine and psychiatry, of Freud and psychoanalysis, behaviorist's biofeedback and Jungian induced adventures into an obscure intellectual mysticism. It is a mind-set that, in some respects supplements occult views but in other respects belittles them. It is a mind-set with the right intentions but without the proper intellectual tools to make a difference. Lucid dreaming implies a world-view that does not embrace the occult but one that overlaps with it in key areas. Such areas include: mental health, personal and interpersonal relationships, counseling, therapy (which has often utilized meditation) and other such approaches. In a sense this is a mind-set that is on the fringes of current institutionalized learning, in that it is practiced and believed by many professionals but it is simply not at the heart of the concerns of contemporary Western academia.

To delve further into the hidden overtones of the term lucid dream, let us concentrate on this idea of "modern Western academia". There are many important points concerning the understanding of the projection/lucid dream/OOBE phenomena that can be clarified, simplified and better understood if we make the distinction between institutionalized learning on the one hand, and the total sum of knowledge we have available to us today on the other hand. This is the difference between the entire intellectual heritage of the West, and those particular portions of it taught in our high schools and universities. This is the difference between what there really is to know and what we are taught that there is to know. It is an arbitrary distinction in some respects, but it is one that will allow us to proceed a little more clear-headed on some points than if we did not make the distinction at all. The terms "lucid dreaming" and "OOBE" are both products of the institutionalized intellect of the modern Western academia. The occult, on the other hand, though a substantial product and heritage of Western Civilizations, is not an accepted part of contemporary learning.

Continuing with our terms, our next consideration is to realize that the term "OOBE" has its origin in the science of parapsychology. Not to sound too haughty, but from a historical perspective, from the perspective of the intellectual heritage of the West, the science of parapsychology is easily lost in the details. It is a new science, the self-proclaimed descendant of the nineteenth century Society For Psychical Research. It is a confused and fragmented science in fact, but also a brave attempt to achieve something far outside of its scope of comprehension. Parapsychology cannot stand alongside the Western occult tradition, for the latter can claim a rich history extending back as far as we know, available to anyone who should look. The occult tradition can claim a time when it was indistinguishable from science. The astrological charts Kepler consulted as a professional astrologer were not that different from the charts used by astrologers today. Parapsychology, unlike occultism, is only a recent invention of a rational materialistic mind-set, an imitator in style but not in content of that which we take to be science. It is a poor imitator that unwittingly and unknowingly mocks the great intellectual heritage of science by perpetuating an attitude which shuns the vast and great mystical and occult literatures and traditions of Humankind, and ignores the contributions of these traditions to the heritage it of which it pretends to be a part. It simply does not know what it is missing. Fortunately this is a situation in transition. We have already seen from previous examples that it is only a matter of time before occult views become integrated with and assimilated into Western sciences, and parapsychologists themselves are finally beginning to admit the need to embrace occult type notions².

The idea of conceptualizing the phenomena under discussion as an OOBE is that, at the expense of sounding redundant, one leaves their body. Yet it is fair to ask: *What* leaves the body and *where* does it go?

I said earlier that the mind-set implied by the term "lucid dreaming" does not have the intellectual tools to cope with this phenomena, and these questions serve to illustrate this point. Treating the experience as a "lucid dream", these questions disappear for it is no other than a normal dream, albeit one in which you are "awake". When we call the experience an "astral projection", at least we can answer these questions. Occultism offers an answer. But in the cold-hearted rationality of a Newtonian universe and even now in the smug uncertainty of a quantum chaos, there seems little room for the worlds of the Gods, the Demons and the Dead.

Parapsychologists, and institutionalized learning in general, do not know what an out-of-body experience is. This is because they have no clear conception of the validity and reality of nonphysical phenomena on their own terms (this being precisely the subject matter of occultism.) The non-occult term "out of body" implies an essentially physical conception of the phenomena grounded in a mind-set devoid of conceptions of nonphysical realities. The term "OOBE" implies a picture of the process as some gaseous wraith leaving the physical body, traveling through the night sky outside our windows, to some distant location. At least we can only guess that this is what is meant. Questions are asked in this field but assumptions are rarely established, and in turn, this makes interpretation of their ideas difficult.

Some parapsychologists have suggested that perhaps there is a grain of worth in occult concepts and methods, but rarely if at all are the implications elaborated or even considered. No, this mind-set has wrought an attitude towards occult phenomena that asks: What is the

change in weight in a body after it dies? Can probability determine if I am telepathically predicting the order of these cards? Can I psychokinetically alter the probability of this atom's decay rate? Can I psychokinetically alter the activity of this enzyme? Can an OOB subject go into the next room and read the number on the wall? From an occult view these questions are noble but naive attempts, and they illustrate the inability of the Western institutionalized framework of understanding to grasp the heart of the issues involved³.

It is not difficult to concede that perhaps there is some worth in such an approach, if only to show how scientific tools may be applied to seemingly occult matters. But if this approach has been successful, it is in the fact that it has shown us what *not* to do and think. The dialogue of such experiments has only served to obscure the issues by distracting our attention from more fundamental matters. If we attempt to understand occult phenomena in purely physical (note: I did not say "materialistic", "rationalistic", "positivistic", etc.) terms, then we are doomed to fail. Simply because they are not physical phenomena. Phenomena, yes, but things of the tenuity of a smile, or a unicorn, rage and glory and inspiration. These are not physical things and they cannot be captured in solely physical terms, though their physical effects can be cataloged to infinity. This is the fundamental flaw in the unconscious assumptions of parapsychology; the present approach is preoccupied with the physical effects of nonphysical phenomena when it has developed no clear conceptions of the nonphysical phenomena. Until such a theoretical framework can be established such cataloging of physical effects will be a useless and confusing exercise. It must eventually be accepted, not only by parapsychology, but by the entire intellectual climate of the West that nonphysical phenomena are an empirical reality that must be accepted and made an explicit axiom in our understanding. The situation is completely analogous to the situation in physics at the turn of the century, when physicists had to accept the reality that the speed of light is a constant measure. Although I earlier said that understanding our phenomena by the term "astral projection" is difficult because it implies a knowledge of occult world-views, understanding the phenomena by the term "out-of-body-experience" or "lucid dream" is actually a vaster task in that it implies that we understand the structure of, and confusion within, modern institutional learning.

So to conclude this discussion we return to the title of the chapter: "What's in a name?" With respect to the experience under consideration, the name seems to imply the definition of what is going on. I have discussed how the various names given to this experience imply vastly different metaphysical systems and assumptions. The term "astral projection" is grounded in and implies conceptions of an occult nature, alien conceptions of other worlds outside of space and time as we know it, conceptions easily misunderstood by the "informed" culture of the late twentieth century. Conversely, the term "out-of-body experience" implies a quite different set of assumptions, and those are the assumptions of the Western institutionalized intellect with its rich and infinitely detailed never-ending maze of definitions and distinctions, a mind-set too hypnotized by its own intellectual creations to pierce through to straight answers. And finally, the term "lucid dreaming" seems to be a watered down compromise between the two other positions. "Lucid dreaming" is a term open enough to accept the metaphysics of the more esoteric sides of Western psychology and medicine, but not encompassing enough to actually provide us with a model of the processes in operation in terms of relating our waking and dreaming experiences with the structure of the worlds of these experiences.

Notes: Chapter 8

¹A very good technique book about astral projection is Rogo, (1986). Other useful astral projection material is Monroe, (1971), and Monroe (1985).

²Rogo, (1986).

³A very clear example of the Western institutionalized intellect's inability to grasp the fundamentals of occult thought can be found in Monroe, (1985). In the appendices to this book is reprinted a paper by Twemlow, Gabbard and Jones concerning the phenomenology of the OOB. Looking through the references to this paper, I was quite surprised to see Besant and Leadbeater's book *Thought-forms* referenced here. Looking to the text of this paper to see just why they were referencing *Thought-forms*, this is what is said:

"An old theosophical tract used the concept of "thought-form." In the general case the OBE is a typical "thought-form," the question really being: What form does the thinking take?" (page 283 of Monroe, (1985)).

Now, an OOB is *not* a thought-form. I have discussed thought-forms at great length in this book. One can see thought-forms during an OOB (as many authors who have had the OOB report), as thought-forms are a definite part of the scenery of the astral and mental planes. To the clairvoyant, thought-forms look like statues, or theater stage sets. The OOB experience is itself an altered state of consciousness. One could argue against the occult view that one goes to the nonphysical planes during the OOB, but such an argument would have little to do with thought-forms. An OOB is simply not a thought-form. I do not know what these authors are talking about by referring to the OOB as a thought-form. I wonder if these authors even read *Thought-forms*, because Leadbeater is very clear as to what he means by the term "thought-form" (even going so far as to provide illustrations). In any case, it is apparent that these authors simply do not know what they are talking about. They do not understand what a thought-form is, nor do they realize that thought-forms and OOBs are two totally different phenomena. This example clearly illustrates the Western institutionalized intellect's complete inability to grasp occult concepts.

Chapter 9. Just What Do We Mean By A Science Of Psychology?

As we get deeper into our study of occultism, and realize that much of the occult deals with psychological behavior, I think it is important that we begin to ask ourselves "Just what do we mean by a science of psychology?".

There is an assumption here that we can step outside of ourselves and objectively describe ourselves, our psychology, our subjective behavior. But this assumption runs into a paradox very similar to the self-referential paradox which is the main ingredient of Gödel's theorem. Attempting to define a science of our psychological behavior is very much like the eye trying to see itself. How can the mind, the source of all ideas, create ideas that transcend its very nature? This is a situation of infinite regress: the mind defining itself defining itself defining itself ad infinitum. Ultimately we are led to the same kind of meaningless recursion found in Gödel's theorem. At this point our endeavor becomes a boring and irrelevant intellectual game. As van der Leeuw says, clever, but meaningless in terms of our lives.

That we can have a scientific or objective view of our psychological behavior is an echo of the positivistic stance that all of Nature can be understood in terms of science, mathematics and logic. But again, we have seen from Gödel's theorem that ultimately even these forms of knowledge have their limitations. Objective descriptions of reality are inherently incapable of describing reality completely. Instead, objective representations of reality are only valid within a very narrow and confined range of experience. Not only this, but I think that the important lesson behind Gödel's theorem is that there really is no such thing as an objective view of reality. Objective stances are ultimately as subjective as anything else a human does simply because of the fact that an objective view is just as much a product of the human mind as any other viewpoint. We have to ask ourselves why we assign so much importance to an "objective", as opposed to a "subjective" viewpoint. It is relatively arbitrary to assign any greater importance to one type of mental creation over other mental creations. From such a perspective, the belief that we can objectively understand anything at all seems to be a naive childish game or the activity of people incapable of following their assumptions through.

It would seem then that any attempt to define the mind and its operations is a futile game doomed to failure. But as Charles Fort says, there are no absolutes, all things are intermediate to the extremes. We might speak of the two ends of a log, but what really exists is the log filling the space between its two ends. I think the same type of logic applies to this situation in attempting to understand the metaphysics behind a science of the mind. We can argue both the pros and cons of a philosophical basis for a science of the mind and human behavior. But in the long-run this is not going to stop people from studying, analyzing, describing, and cataloguing human behavior. We can go around and around arguing subtle metaphysical distinctions. The reality of the matter is that some descriptions will be more accurate than others. No description in itself is going to be the correct and only description. This positivistic myth is dead. We may posit a hypothetical "correct" description of human behavior that any given description will approximate better and better, but this is foolish for

we know that no such thing exists, at least in terms of ideas or a particular system of thought. However, there is something that exists to which we can compare our symbolic representations of our experience and that is our experience itself.

And at this point it is legitimate to ask: whose experience? My experience? Your experience? The collective experience of the species? Here we run into the problem of what is and what is not real within the framework of experience at whatever level. We have already discussed this issue with regard to the unreality of occult facts within the scientific paradigm. When we talk about what is and what is not real within the framework of experience we are actually asking what is the world-view and what levels of experience does a particular world-view admit to be real. And the solution to this dilemma lies in the "Chinese box" approach to world-views, a method used by the philosopher Alan Watts. The "Chinese box" approach is one in which we adapt a "meta-world-view", a world-view that allows us to survey any world-view on its own level and in its own terms. From such a perspective we realize that some world-views are capable of containing other world-views as, for example, we have seen that occult world-views can contain scientific world-views or that, as Alan Watts argues, the Hindu world-view can contain the Christian world-view¹.

Thus the issue of "whose experience?" is a matter of "whose world-view?". And I posit that, from our meta-world-view, any world-view is legitimate raw material to draw upon for sources of information pertaining to the general human experience. A true, or more accurate, science of psychology ultimately has to be general enough to account for the tremendous variety of human experiences as reflected in the tremendous variety of existing behaviors, whether these are scientific, occult, or anything else. What I am saying is that the meta-world-view I am introducing is actually the metaphysical basis for a general theory of human behavior.

So let us then undertake to construct a science of psychology within the context of the metaphysics put forth above. What I propose here is that we can effectively synthesize the occult and scientific notions laid out in the previous chapters and construct a conceptual framework of human psychological and sociological behavior that is perhaps more accurate than existing views.

Again the issue is not one of better or worse. The issue now has to do with a more refined consideration of what comprises a science. We have seen that there is the distinction in modern science between "hard" and "soft" sciences and that, fundamentally, the "soft" sciences which are the study of human behavior, are unrelated to the "hard" sciences which study physical matter. This is due to the very complex nature of the systems under study, namely human beings and the activities of human beings, and such complex systems have traditionally not been amiable to "hard" scientific approaches. Thus, many views have and do proliferate in the social (or "soft") sciences.

Yet new considerations enter into the picture that allow us to ask again if it might not be possible to develop a theoretical framework for the sciences of human behavior somewhat analogous to the unified and interrelated types of models found in the physical sciences. These considerations fall into two broad classes. First, what is the relevance of the new sciences of complexity, namely fractal geometry and chaotic systems theory for the development of more unified social and psychological sciences? That is, may chaos and fractals allow us principles with which to find common ground among the phenomena of psychology and sociology, and

perhaps even show levels at which these human phenomena mirror phenomena found in the physical sciences? And secondly, to what use can the occult ideas of human nature laid out in previous discussions be of use in the attempt to construct a science of psychology that is a more accurate reflection of our actual experience? It is the second of these questions that we shall address first.

We can use our meta-world-view to look down from above, so to speak, onto both science and occultism and see what elements these paradigms share and how each helps to illuminate the other. If we recall that the main elements common to both scientific and occult viewpoints were quantum mechanics (which implies the study of "vibrations"), fractals, chaos and, as I have argued, the experimental method, we can use these notions in conjunction with occult psychology (i.e. occult anatomy) to create a view of human behavior superior to either the scientific or occult views. It is a view that is superior to both approaches because it is the synthesis of both approaches and therefore affords us the best of both worlds. Let us see how such a theoretical model would look.

We begin with the ideas in occult physics that there are many planes of Nature upon which we, as beings, operate simultaneously. Thus we introduce into science the notions of the astral, mental and other planes. It is reasonable to ask; just how do we operationally define the planes? How can we pinpoint and distinguish phenomena on the nonphysical planes so as to be useful scientific tools? For the sake of keeping the following discussion at a level comprehensible to the realms of our physical experience, we will consider only the etheric, astral and mental planes.

At a first approximation, human behavior will be seen to operate simultaneously upon the physical, etheric, astral and mental planes. To understand the operational nature of these concepts, we must keep in mind just exactly what the etheric, astral and mental planes are. The etheric plane is the world of physical sensation, the astral plane is the world of emotion, and the mental plane is the world of thoughts and ideas. If we conceptualize our physical sensations as occurring on the etheric plane, our emotions as occurring on the astral plane, and our cognitive behavior as occurring on the mental plane, then we have our operational approach to these planes. That is, each of these planes may be thought of as separate "spaces", or worlds, in which these levels of our subjective behavior operate. These definitions will be clarified in greater detail shortly.

To the reader unfamiliar with these notions this may at first seem to be a useless gesture. It may seem that we have made little inroad to understanding the nature of sensation, emotion, and mind by simply giving them new names. Yet much of the confusion that exists in the psychological and social sciences rests in the assumption that sensation, emotions and mind are somehow caused by physical phenomena. Obviously our subjective awareness of physical sensation is dependent upon the structure of our physical bodies and of the physical world, but it does not follow that the subjectivity of physical sensation is a physical phenomena. That physical sensation *is* subjective points to its essentially nonphysical character. The situation becomes even more blatant with regard to emotions and mind. Traditional approaches in psychology look to the structure of our physical bodies, and especially the structure of the brain, to understand the structure of our emotions and mind. There is no doubt that there is a constant interplay amongst physical, emotional and mental phenomena, as is obvious from a couple shots

of whiskey or a few too many Valium, on the one hand, or approaching a physical situation with a bad attitude on the other hand. Yet to seek to explain emotional and mental phenomena solely in terms of physical cause and effect is to only introduce confusion by marring the unique aspects of physical, emotional and mental levels of phenomena. We do both our minds and our emotions a great injustice by believing that they exist only as corollaries of our physical bodies. And likewise, the tremendous success of the physical sciences shows us that there is little need to attempt to understand physical phenomena in terms of the mind.

The advantage of the occult view is that we can now appreciate the unique features of physical, etheric, emotional and mental phenomena as self-contained features inherent to each particular plane. That is, each particular level can be understood to be unique in its own terms, and it is not necessary to define one level in terms of the other, such as, for example, seeking a physical cause for mental phenomena or seeing a mental cause of physical phenomena. What we are left with is a view of human experience that sees a constant interaction and interplay amongst these four relatively autonomous levels of human experience: the physical, etheric, emotional (or astral) and mental. The questions that we can now ask become: 1. What are the phenomena in operation on a particular plane and 2. What are the means by which the phenomena of one plane affects another plane?

Such a switch in our view by assigning sensation, emotions and the mind their own unique levels, or planes of operation greatly simplifies our conceptual understanding not only of these phenomena, but of the interrelation between these phenomena. But alone this is not enough. We have to go deeper into our study of the astral and mental planes to truly appreciate the power of the occult views.

Yet before I go into these topics in greater detail, there is still the issue of pinpointing or identifying the phenomena of these planes in the most literal sense we can. What I am concerned with at this point is that we know of the physical world because we have senses that display to us the physical world. As a matter of fact the physical world is defined by the fact that it is the world we perceive with our physical senses of sight, sound, taste, touch and smell. But how do we know of the astral or mental worlds? We cannot see, smell, hear taste or touch astral or mental objects. How do we even know they exist?

Actually the problem goes very deep, for in our culture and in our language we do not understand emotional or mental phenomena except in the same terms as we understand our sensations of physical phenomena. That is, because of the way we use language, we confuse our subjective sensations at the etheric, astral and mental levels. Thus we speak of "feeling" sad or angry as if we have touched these emotions with our hand. And we speak of "seeing" an idea--"oh, I see what you mean"--as if our eyes see the idea. We even speak of "the mind's eye" when literally, our minds are not eyes. Thus, we are so used to understanding emotional and mental phenomena in terms of our physical senses that we never are really able to appreciate the uniqueness of these phenomena in their own terms. We have no words with which to express our subjective sensations of emotional and mental realities in their own terms, and this factor has probably contributed greatly to our urge to understand mind and emotion in physical terms and the confusion that has resulted from such an endeavor.

There is a second complicating factor also and this is the particular relationship that exists between emotions and ideas in our culture. Emotions and ideas tend to be so interwoven

in our everyday behavior that it is difficult for us to separate easily what is an idea from what is an emotion. At the extremes this is easy and we know that anger is an emotion when one's voice gets loud and threatening, or we know that "1+1=2" is a quite emotionless idea. Away from such extremes, we find ideas and emotions tightly wound round one another (which is much more common in our experience), and it becomes harder and harder to distinguish emotions from ideas.

The combination of an emotion with an idea, or set of ideas, we normally call an "attitude". And we can readily pinpoint attitudes. But it is difficult for most people to dissect an attitude into its component ideas and emotions, not because it is inherently difficult to do so, but simply because we are not used to doing it. For example, such ideas as "God" or "murder" or "Communism" cause us to well up not only the intellectual realizations represented by these words but also very particular emotional states. Usually, in cases such as these we don't even understand the intellectual component but only the emotional component. These examples illustrate that the words actually represent attitudes more so than pure ideas. And the fact that we use words to represent relatively complex attitudes shows how little we are consciously aware of the emotional overtones of ideas (as in the examples above) or the cognitive overtones of emotions.

An excellent example of the latter is the word "objectivity". So many purported philosophical arguments about the nature of objectivity boil down to little more than a reflection of the ignorance of the arguer of the emotions that are unconsciously associated with this word. Objectivity, in the reality of our experience, is much more an emotional state than it is an idea, and the fact that we treat "objectivity" as an idea shows how really ignorant we are of the subtle interplay and interweavings of ideas and emotions.

Thus, this is probably the single most useful reason to be aware of the occult notions of the etheric, astral and mental planes; to refine our awareness of the emotional and mental realities and their interplay in our day to day life, and to be capable of separating these from the terms of our physical sensations. Aside from the scientific worth of these ideas, these are realizations useful to all of us no matter what our walk in life.

Therefore, once we see beyond these complicating factors of our language's inability to describe emotional and mental phenomena clearly, and the fact that what we usually call "ideas" are in reality "attitudes", which is at first no easy matter, we can then begin to appreciate that we indeed possess senses in addition to those that define physical sensation, whose functions are to reveal to us activity occurring on the astral and mental planes.

In terms of our physical perceptions, which are the essence of the etheric level, astral and mental phenomena are quite invisible processes. But once we become sensitive to the natures of the astral and mental planes and the senses we have for detecting these levels of our behavior, we begin to realize that what is physically invisible is not invisible in other terms. What I will discuss now are these senses we possess for detecting astral and mental events.

Broadly speaking, the situation is not so easy to describe because no simple one-to-one analogy exists between our physical senses and our astral and mental senses. That is to say, there are no astral smells or mental tastes, at least in terms of our usual conscious waking experience. An attempt to understand our astral and mental senses actually alters our view of

our physical senses and leads us to focus on our physical senses in a more unified manner. In this regard, consider the following quote by Leadbeater:

"The vision of the mental plane is again totally different, for in this case we can no longer speak of separate senses such as sight and hearing, but rather have to postulate one general sense which responds so fully to the vibrations reaching it that, when any object comes within its cognition, it at once comprehends it fully, and as it were sees it, hears it, feels it, and knows all there is to know about it by the one instantaneous operation. Yet even this wonderful faculty differs in degree only and not in kind from those which are at our command at the present time; on the mental plane, just as on the physical, impressions are still conveyed by means of vibrations travelling from the object to the seer"²

The analogy between our physical, astral and mental senses rests, as Leadbeater clearly states, on the understanding that our physical senses all react to various degrees and types of physical vibrations. Thus our eyes are detectors of light waves. Our ears are detectors of sound waves. Our senses of taste and smell are sensitive detectors of chemical shapes which are, according to quantum mechanics, standing waves (vibrational patterns) of electrical energy. And our sense of touch is a detector of mechanical vibrations passing through physical objects. All of our physical sensory apparatus serve to convert particular types of wave motion in our environment into the perceptions of our consciousness. And these physical perceptions make up the essence of our etheric experience. Generally speaking, our astral and mental senses operate in this same fashion by converting astral and mental vibrations into the contents of our consciousness.

However, we do not subjectively perceive light or sound as vibrations, instead focusing on other qualities such as color or pitch, texture or timbre. Likewise, our perceptions of astral and mental events do not subjectively appear to us as vibrational patterns. Instead, when we perceive astral vibrations we experience emotions, and when we perceive mental vibrations we have an idea or think a thought. That is to say, *our astral sensory apparatus is exactly our emotions, and our mental sensory apparatus is exactly our mind*. And our emotions and thoughts have no ready counterpart in terms of our physical senses. Thinking and emotions are quite unique aspects of our conscious awareness operating side-by-side, or interpenetrating with our physical perceptions. It is in this sense that we operate on these planes simultaneously.

The qualities of the higher planes (those beyond the mental plane) are much more abstract to describe and very rare occurrences in the awareness of most of us and that is why I am not discussing them here. Intuition, which is actually an aspect of very "fast" mental vibrations, can give us a slight idea of the nature of the planes beyond the mental. The mystical experience itself is a function of the buddhic plane. When one has the rare experience of direct mystical insight, this is in actuality the utilization of the buddhic body as a means of sensing the buddhic plane. Again, this is a very rare occurrence at the present stage of human evolution, and most of us operate our whole lives only on the physical, astral, and mental planes. The

planes beyond the buddhic plane are inaccessible to the subjectivity of our physical (normal waking) personalities.

Before going into greater detail as to the nature of our emotional (astral) and mental senses, I would like to point out that, just as our physical senses convey to us particular levels of phenomena which can be understood or studied by means unique to that level of phenomena (such as light, heat, electricity, etc.), so too does the occult view as I have outlined it thus far point to new levels of phenomena which can be studied and understood on their own unique levels. In this case the phenomena do not seem so new, our mind and emotions are with us all the time. But looking at them in occult terms allows us to begin to conceptualize them much as we would phenomena such as light or sound, and thus develop a more objective approach to the study of emotions and ideas. Thus, we have seen one example of phenomena unique to the astral plane, this being the elementals described by Besant and Leadbeater in section 5.1. Likewise with the mental plane, a unique phenomena at this level is that of thought-forms and their behavior. We will talk in some detail about thought-forms in chapters 11 and 14.

As I have alluded so far, we indeed possess senses that allow us to perceive astral and mental phenomena and I have said that these senses are, respectively, our emotions and our minds. This is a very novel claim in terms of Western thinking. It is quite foreign in the context of modern psychology to think of our emotions and our minds as senses that allow us to detect (vibrational) activity on planes that are nonphysical, but indeed, this is the common teaching of occultism.

The primary reason that such notions are foreign to modern science is that, as we have seen, modern science as a whole is ignorant of the concept of the nonphysical planes. Jung's psychology is the only theoretical framework in modern science that comes very close to defining concepts equivalent to the occult notion of the planes. That is, in many respects, Jung's concept of the Collective Unconscious greatly resembles a kind of hybrid notion fusing the concepts of the astral and mental planes. Yet Jung couched his concepts in other terms, for whatever reasons, and his terms are simply not as conceptually straight-forward as the occult concepts. Jung's ideas are very abstract and do not make clear the *literal and material reality* (nonphysical, but material nonetheless) of these planes and their associated phenomena. Furthermore, Jung's ideas, though having tremendous impact on the development of twentieth century psychology, have had little impact on other branches of science such as physics or biology.

The notions of the planes described by occultists as I am explaining here have immediate implications on other sciences and most especially on modern physics with its unified fields and hidden dimensional spaces. As I will discuss in a later chapter, there is every reason to believe that the occult planes are indeed the literal reality behind the "hidden" dimensions of the mathematical models physicists use today. That is, the astral and mental "spaces" as described by occultists are amenable to the same type of mathematical understanding as the physical 3-D space which produces our etheric consciousness. And, as we have already touched on in previous discussions and will discuss in later chapters, notions of occult anatomy have immediate relevance not only for modern physics, but for biology and physiology as well. Thus occult psychology is superior to traditional approaches in its relevance to other branches of modern science, most especially the "hard" sciences.

Returning to the point, another advantage of adopting these occult concepts is that they provide a simplifying mechanism in the study of human behavior. It is conceptually simpler if we can understand all the contents of our subjective awareness, our physical, emotional, and mental impressions, as sensory input from the respective planes. This provides us with a basis to understand emotional and mental phenomena that is analogous to the manner in which we understand physical sensory phenomena, minus the confusion that results from the nebulous situation of defining emotions and mind in the same terms as physical sensation. This is much simpler than trying to *ad hoc* define emotions and mind out of the blue, or in physical terms. Not only is the occult approach conceptually simpler, but it is not abstract. The occult approach is absolutely *literal*. The nonphysical planes are real and have direct impacts on every level of physical life from the objective world of physics to the subjective realms of emotion, mind and mystical insight.

What we shall see is that using these occult notions as a basis, we now have a unified framework to understand processes such as human psychology, processes of communication, and social interaction in a manner that is equivalent to the way physicists and chemists understand communication and interaction amongst atoms and molecules. The advantage here is that we shall begin to discover unified principles of organization between human behavior and natural processes. We will elucidate processes that operate on all levels of Nature from the subatomic to the human, illustrating the self-similarity of Nature principle of which I have already spoken. Philosophically, at least, this will illustrate to us that we humans are much more a part of Nature than our Western sciences and philosophies have led us to believe.

Notes: Chapter 9

¹Watts, (1973).

²Leadbeater, (1986), pages 17-18.

Chapter 10. The Subtleties Of Human Behavior

To truly appreciate the contents of both the scientific and occult paradigms, we must first have a clear comprehension of the organizing principles of the thing that created these paradigms to begin with--the human mind.

As we have already seen, there are many problems associated with modern science's view of human behavior, be it normal or (seemingly) abnormal. What we want to do in this chapter is continue what was started in the previous chapter. In the following discussions we will continue to utilize both scientific and occult concepts as we quest after a clear and encompassing view of human psychology.

Here I will discuss the gestalt nature of our thinking processes. The gestalts of meaning within which our minds operate I call "contexts". Through understanding the contextual organization of our minds in our day to day thinking, we will be in a much better position to appreciate the subtleties involved in both scientific and occult thinking and any relationship we may posit between the two. And once we have clarified the fact that we think in gestalts, in part two of this chapter I will characterize this process by defining the nature of the ego and its relationship to personality, these being the two fundamental ingredients of the gestalt processes of the mind.

10.1 The Gestalt Nature Of The Mind

"I think, therefore I am." This popular quote is attributed to René Descartes, the famous 16th century philosopher whose ideas have had a vast impact on the development of the Western intellect. What Descartes was attempting to do was to express the most obvious and self-evident fact of our experience. To Descartes this amounted to perceiving the result of the process of realization, or more specifically, the process of self-realization ("I think"), and through this process attribute existence to himself ("I am")--and the rest of us for that matter. In Descartes's term it seems so clear and obvious. Yet restating his conjecture in other terms begins to reveal some of the hidden complexity in Descartes's seemingly simple statement. I do not want to go off on a critical analysis of Descartes's thought. The purpose of starting with his famous quote is that I would like to begin to look at the issue: what is the most obvious and self-evident fact of our being?

Now, the situation we are interested in here is much more involved than such a simple question, or simple interpretation of Descartes' quote would imply. The question itself is a mere indicator. It points to deeper needs and motivations. Talk--language and words--are only the surface of our mental, or more broadly, psychological experiences. It is easy to get caught in the subtleties of verbal expression at the expense of missing this point. We may sit and discuss clever mental abstractions, dress them up in any terms we choose; scientific, occult, philosophical, political, religious. These are only decorations. The terms of our verbal expressions are merely the outer surface (or inner wall, if you like) of complex configurations of attitudes, memories, perceptions, habits, emotional responses and the like. These factors are the

seemingly hidden underside of the concepts, ideas, thoughts and such that manifest on the verbal and intellectual levels. When I say I want to get to the point, what I mean is I want to focus on this configuration of factors and how they shape and mold verbal and intellectual behavior. We may operate with ideas solely within the framework they themselves define, but this is only blinds us from the hidden undersides of such frameworks. And these hidden undersides of the frameworks of thought in which we operate are the true essence of these frameworks.

In modern psychology there is the idea of the subconscious, whether it be along the lines of Freud's concept and seen as a place of repressions, or seen in the light of Jung's concepts as a Collective Unconscious, or the variations that abound on such ideas. What I am speaking about here in regard to the hidden underside of ideas are the hidden subjective aspects of the physical personality, but it is not a *subconsciousness*. I do not like the notion of subconsciousness as is taught in modern psychology because it implies that there are things hidden and inaccessible from the consciousness of individuals. As I will discuss in a later chapter in more detail, this type of alienation is characteristic of Western science. At this point, I would like to redefine the concept of "subconsciousness" in such a way as to show that the hidden undersides of thought are readily available to an individual's awareness. It is not that we have a subconscious that is distinct from our personality, it is that there are aspects and factors of our subjectivity which are not held in our awareness at any given moment.

I will not deny that there is a vast *unconscious* side to our existence, and as a matter of fact, our unconsciousness is the entirety of Nature that exists outside the ranges of our conscious comprehension. But with regard to ideas about the unconsciousness as understood in modern psychology, in terms of concepts of the *subconscious*, it is better replaced by the notion of the planes. The planes, astral, mental and so on, are the spaces, or worlds that are the substrate of our personalities, and as such are akin to modern ideas about the subconscious. When seen as planes, these ideas take on a literal reality which is simply not implied in the abstract concepts of the subconscious. The main distinction here is that the planes are a *public* domain, in a sense (as is Jung's concept of Collective Unconscious), whereas the idea of the subconscious in psychology is thought of mainly as a *private* domain. The only private region in our psychology is our personalities, and this is only so because we are so little aware of our inherent psychic gifts as I have previously discussed. The public nature of our personalities will be explained in the chapter "A New Concept Of Motion". What I would like to show here is that our personalities form a gestalt organization in which all parts affect and reflect all other parts constantly. But this organization is not subconscious in any sense of being inaccessible to an individual. This gestalt organization is as wide open to scrutiny as any other phenomena if only the proper framework is adapted for its understanding.

And this leads us the concept of the underside of ideas. Another useful metaphor is that an idea or concept, fact or data is but the tip of the iceberg, and that which is hidden below the surface forms the bulk of what is actually going on. Metaphors aside, the fact I am focusing on is that ideas are the carriers, couriers of the point, but not the point itself. The point itself is *meaning and intent*. Ideas are carriers of meaning, they are carriers of intent. Alternatively, ideas can be thought of as guideposts of meaning and intent. Social convention itself is the unconscious, or conscious in some cases, agreement that certain words, phrases or ideas are to

indicate certain states of meaning. In computer terms, an idea is the address location, the meaning is the actual state at that address.

To discuss meaning and the relationship between meaning and ideas is a very complex topic. The forms of ideation used are necessarily subtle and recursive. That is to say we are thinking about thinking, attempting to understand understanding. But it is easy to cloud the issue by focusing on the recursive nature of the issues at hand. This is one example of how contemporary intellectual distinctions obscure the point. It would be easy to get lost in a discussion of Gödel's theorem at this point.

Instead, what I would ask of the reader is to look at how the facts one is aware of fit into a greater configuration of attitudes. For every fact has associated with it particular emotions. And I do not mean this in the sense that facts map to some given emotion following some abstract procedure. Actually the case is the exact opposite. It depends on the individual person, their history and experience. Each person has their own unique emotional connections to any given fact. And most often, each individual has many emotions attached to any given fact. One cannot be fooled by the standardizing or leveling force of social convention, for in spite of these seemingly agreed upon meanings, we each color the elements of our personalities in completely unique fashions.

To clarify the relation between facts and emotions we must introduce a new concept, that of "context". In one respect, the idea of context is the realization that in isolation, facts possess no meaning whatsoever. Facts are only meaningful within some type of context. There are many familiar words related to the concept of "context" as I am using it: synergy, gestalt, attitude, point of view, world-view, paradigm, weltanschauungen and even, as I have stated, subconscious. Each of these concepts sheds a partial light on what I mean by the word "context". I spent time earlier discussing Kuhn's notion of "paradigm", but this idea can be expanded out much more broadly than Kuhn took it. To Thomas Kuhn, a paradigm is a gestalt and holistic frame of meaningful reference by which a scientist understands Nature.

But we need not limit the idea solely to scientists. For if we look at the essential feature of our minds, what we will see is that each and every one of us quite automatically operates within a gestalt frame of reference in our day to day lives. This gestalt frame of reference is essentially our personality (or in occult terms it is our "aura"). Our personality provides a matrix within which we conceptualize the events and facts about us. And on an even broader level, the actual gestalt context that we operate within is the entire frame of our experience. But our experience is always conceptualized and filtered through our mind, thus it is at the level of mind that this gestalt behavior that I am calling a "context" resides. Because of this, as I will discuss below, a context is the fundamental unit of human communication.

It is the contextual organization of our mind that replaces the notion of subconscious. For, at any moment in our awareness, the contextual organization of our mind indicates that most of what our personality is *implied* in what is being expressed. But the implied is reflected in the expressed, much in the same fashion that a piece of a hologram contains the whole within it. Again, this is another example of applying the Hermetic Axiom. Our personality as a psychological entity is self-similar at all of its various levels.

Let us explore deeper the contextual organization of our minds. The fact " $1+1=2$ " has a meaning completely different in the context of elementary school mathematics than it does in

the context of advanced number theory. Likewise, the same fact has a completely different meaning in the context of, say, a business transaction or the context of cultural anthropology. It is only by explicitly defining our context that we may proceed to understand the meaning of the facts and ideas used to express that context. In our day to day discourse we rarely ever actually define the contexts within which we operate, because we really have no need to do so. We very automatically and instinctively understand each other via contexts. I'll elaborate on this ahead.

Yet, if we accept the proposition that facts have no meaning in themselves and are only meaningful in some type of context, we are still somewhat over simplifying the situation. Take our "1+1=2" example from above. In some sense, there is a meaning to this fact that is common in all of the above mentioned contexts. It is not my intention here to attempt to distill this meaning from these contexts, for this would only result in the creation of a new context which includes the fact "1+1=2" in it. I would be losing the point to get caught up in such a discussion. Instead, I ask the reader to see intuitively, or imaginatively, the four contexts and to see how the notion "1+1=2" has a common meaning within each. The point of such an exercise is to see that contexts are not as rigid definers of cognitive meaning as I may have initially implied. Just because two contexts are different does not mean that a fact cannot possess the same meaning or cognitive value within them. So how is it then that contexts distinguish the meanings of a given fact?

The answer is that different contexts allow a given fact to possess different implications. In essence, a context gives a fact a different *shade* of meaning. A fact has overtones, so to speak, and different contexts bring out different overtones of meaning of a given fact. The situation is analogous to the way in which middle C sounds differently if played on a piano, a guitar, or a trumpet. Each instrument may be playing the same note, yet each instrument brings out certain overtones that color or shade the actual quality of the tone.

When we realize that different contexts give different shades of meaning to a given fact, then we get a clearer idea of how a context determines the meaning of a particular fact or idea. The context determines the implications of the fact. Or in other words, the context serves to rank the fact within some type of priority scheme. This priority scheme is a complex and highly specific configuration of cognitive (mental) and emotional (astral) components, each interlocked with the other in a highly synergistic fashion. It is this priority scheme that is the gestalt underside of a fact, the hidden underside of the iceberg. The facts only possess meaning in the terms explicated out by this priority scheme. It is a tautological situation: the meaning indicated by the fact implies the context, but the context defines the meaning of the fact. In this sense, all thought is circular and self-contained (this is a function of what I call the "Möbius geometry" of the ego as discussed in part 2 below).

What is this hidden priority scheme which is the essence of a context, and how does it color and define the meaning of any given fact? On a specific level, this priority scheme is a function of our interests, motivations and purposes, or lack thereof. However, we can take a more general view of these. What we must realize is that, in our minds, we operate on two levels simultaneously. That is, there are two faces to cognitive processes. On the one hand, there is the level of thoughts, words, ideas, facts, or essentially a symbolic or outer level. On the other hand, there is the inner level of meaning and intent. This is essentially the distinction

between form and substance. The form side of our mental experience is easily understood, because it is easily displayed by words and pictures, marks etched on paper, sounds pushed through air. The substance side of our mental experience is very ephemeral for it can only be pointed to via the form side of our experience. On another level, the form side of our mental experience is essentially arbitrary, but the substance side is fixed and unique. We could use any symbol we wish to convey the meaning conveyed by the symbol "5", but the meaning of this symbol exists quite independently of the symbol itself. Yet the irony is that the substance can only be understood through the form. We *know*, we *feel* the meaning, yet we are always forced to convey the substance of our cognition through some type of formed expression. Again the situation is circular and self-contained: meaning defines form, but form captures and conveys meaning. Ultimately the two levels are so intimately intertwined that there is only really one level; that of our mental experience. But in terms of the context I am presenting about contexts, the distinction is useful for clarifying my points.

Thus we ask again, what is the priority scheme of meaning that is a context and how does this entity define the meaning of any given fact or set of facts? A context is ultimately an attitude or set of related attitudes that links symbols together in a unique and particular fashion. The general form of such attitudes is simple in the abstract, but extremely diverse and complex in terms of our actual mental and emotional experience. In the abstract, the meaningful substance of any context can be broken down into a simple emotional response of "these things are good, but these things are bad". The actual nature of "goodness" and "badness" is uniquely dependent upon the particular terms of the context. But all contexts possess this simple and fundamental polarity or dichotomy of meaning, of substance.

If we look at human emotional responses, that which is felt to be good is essentially that which we feel an attraction for at some level or another, and that which is bad is that which we feel a repulsion towards on some level or another. Thus a context defines a fact by assigning it some degree of emotional attraction or repulsion (the ultimate origin of this emotional attraction or repulsion is related to the ecological nature of our personalities, and this will be fully discussed in the chapter "A New Concept of Motion"). What this means in practical terms is that ideas and emotions are always intertwined to a vast degree in our day to day subjective behavior, as I have discussed.

It is through contexts that we understand and communicate with each other. Again, this is a very instinctive process, and we are usually unaware that our communication is actually contextual in its nature. Contexts are often *implicit* frames of reference in our day to day communication. The point here is that it is generally not acknowledged how complex processes of human communication are, and how dependent these are on unspoken factors.

The fact that human communication occurs via contexts is a very difficult concept to address. Again, it is because the process is so close to us that we do not see it for what it is. Also, we cannot discuss this process without discussing the fact that often, in our everyday interpersonal discourse we do not communicate as fully as is possible.

Since the mind operates at a gestalt level, so does our communication. As I've already said, words and ideas are but indicators of meaning. It is the meaning and intent that is the essence of communication, not the words or even the thoughts behind the words, though this intent is (in a sense holographically) reflected in words and thoughts. When we have effectively

communicated with another individual, this implies that we have successfully conveyed the gestalt of meaning and intent that is in our mind to another's mind. Effective communication implies that the other person understands the meaning of what we have communicated as we understand that meaning.

Often in our culture though, communication does not work like this. What tends to happen in our culture is that we do not effectively communicate the gestalt that reflects our intent. Instead, we will communicate some particular meaning or intent (via words of course), and the other person will interpret this in terms of the gestalt in their own mind. This is the essence of decontextualization; the other person has taken our communication and not interpreted this in the terms that were conveyed, but instead has interpreted it in terms already present in their mind. This is *not* communication, it is decontextualization.

In simpler terms, decontextualization is misunderstanding. When we discuss the weather, or a football game, or our car, we don't encounter this problem; these are simple topics with well defined social meanings and the communication is usually effected correctly. But as well, these are shallow levels of communication. When we attempt to discuss more abstract concepts, or when we try to put our personal (emotional) feelings into words, we are dealing with levels of meaning that are not socially well defined. It is in these cases that communication often does not occur and misunderstanding, or decontextualization does. Thus, in our culture, we tend to operate socially at relatively simple levels of mind and emotions simply because our society does not acknowledge or understand the nature of real communication.

Let me illustrate what I am saying here with an example. One example with which I am highly familiar is in the teaching of science in the classroom. This is an example of attempting to communicate abstract concepts that are parts of very specific gestalts of meaning. As I said in the first chapter, science as it is taught today in the universities is already decontextualized from its historical context, but it is further decontextualized as well. Instead of the teacher conveying the concepts so that the meaning of the concepts is understood in a scientific context (i.e. in terms of say, actual laboratory practices), what happens is that the concepts are conveyed in the context of passing examinations. The student does not learn the material as it is meant to be taught, or as it is applied in real life, but memorizes it so as to pass an examination. This is the *implicit* context within which communication occurs in the classroom. Later, the student has to relearn the concepts in a "real life" situation. Or more precisely, the student has to re-rank the facts in a different priority scheme to apply the facts in "real life" circumstances (I know that this is what happened to me when I got my first real job doing biochemistry). Thus, this is an example of misunderstanding. Incidentally, the media also does the same thing with scientific ideas when it communicates them by abstracting such concepts from their literal usage amongst scientists. There are further complicating factors here as well in the teaching of science. For example, often there are many unspoken metaphysical and philosophical attitudes associated with the teaching of science, and the student instinctively picks these up because of our instinctive nature to communicate gestalts. So what we are really dealing with here is a process of enculturation.

To summarize what I have said to this point, there are essentially three factors that I have described which are basic components in our psychology: 1. intent or meaning, 2. thoughts and 3. words. Intent creates thought, thought creates words. These are causal relationships.

But I have argued that our minds are a gestalt matrix which is expressed as our personality. Thus, meaning, thought and words are all inter-reflecting components of the personality. They are all self-similar. The primary implication of this view is that there is nothing hidden in our psychology. All of our expression at any level, reflects or is self-similar to, all other levels. Thus the surface expressions of words and thoughts directly reveal the inner meaning or intent underneath. But, since we communicate in gestalts to begin with, we are immediately in contact with the inner intent, or one is at least to the extent that one understands real communication. Real communication is the reception of the gestalts of other people's minds and personalities. Real communication involves a chameleon-like ability to mold momentarily to the gestalt of another. I have also discussed that, in general, we operate at a mostly unconscious level in regards to the actual processes of communication, and the result is that much misunderstanding and decontextualization is present in our day to day discourse.

Thus, both the mind and human communication are gestalt and contextual processes. This notion of "context" that I am presenting here is meant to illustrate the contextual nature of these processes. Contexts, in this sense, can be thought of as configurations of meaning that dwell, in some physiological sense, in our central nervous systems, as well as in our essentially nonphysical personalities. At these levels we must realize that we are dealing with an ecological situation. By the processes of human perception and cultural transmission we are imbibed, or infected, from our earliest social experiences with our culture's contextual configurations of meaning. Once such configurations become established in our central nervous system (and this process we may think of as the development of personality and ego--see the discussion below) then any new, so-called "facts" are inserted in these configurations on the basis of how well they reinforce the existing structure. The point here is that we must realize that processes operating at the level of individual personalities, processes of human communication, and processes of human social interaction are extremely intertwined. Such processes and their relationships will be clarified as we proceed throughout this section.

On this level, even the notion of "context" is only a useful fiction. For our minds are actually composed of associations of culturally created symbols held together in a gestalt arrangement by emotional bonds and cognitive content which are the substantial meaning of the symbols. And such emotional and symbolic configurations have grown as an ecosystem within our central nervous systems and are fed by our culture and our individual experience, and are intimately grounded in the organization of both our physical bodies and our nonphysical psyche. Our self-concepts and our communication with others are intimately interwoven with social definitions. But to truly appreciate these notions we must delve even deeper into the organization of our psychological make-up.

10.2 What is the Ego?

We will now begin to discuss the ecological nature of our minds and personalities. What I will do in the following discussion is argue that there are essentially two fundamental factors in our normal waking subjective experience. These are ego and personality. Both are

different, though interrelated, processes. To begin this discussion, we ask the question: What is the Ego?

"Ego", "egoism", "egotistical"; these are relatively common words used in our society. Usually these terms are used to indicate that a person is behaving in a snobbish or conceited manner, as for example when we say something like 'He's so egotistical about his looks'. Aside from this common level of usage I would like to discuss what I feel the ego is in terms of being a component of our psychological makeup.

I can only think of two other definitions for the word 'ego'. The first is Freud's definition of the ego as being one of the trinity of id, ego, and superego. The other definition is the meaning Charles Leadbeater attributed to this term. Without going into any great detail, I will discuss briefly each of these author's definitions so as to make it clear that my approach to the definition of the ego is delineated from these two.

In Freud's case, his definition can only be understood in terms of his psychological trinity. Freud apparently views our psychological anatomy as consisting of the three main components I listed above: the id, ego and superego.

The id is the part of our psyche containing our most primitive instincts, drives and aggressions. Freud's counter-Victorian mentality no doubt did much to emotionally bias his thinking, but in many respects, his idea of the id, minus the emotional and judgmental connotations, is very similar to the Hindu concept of Kundalini in that the id, like the Kundalini, represents essentially the physiological or biopsychic forces and factors at the root of our psychological makeup.

At the other end of the psychological spectrum, according to Freud, is the superego. This contrasts to the id in that the superego is the part of our psyche molded by essentially societal forces, socially induced repressions, values and morals, concepts of right and wrong and such.

In between these two levels of the psyche lies the ego. The ego, in Freud's scheme, is in some respect the product of, according to him, the conflicting forces of instinct and society. Freud's concept of the ego is essentially our personality, our normal consciousness, but understood in terms of being molded by the often conflicting factors of the id and superego.

This is the essence of Freud's concept of the ego, that it is the essence of the personality or consciousness of an individual and, in some sense, represents the synthesis of which the id is the thesis and the superego the antithesis. Through this trinity, Freud is expressing his perception of the complex relationship between physiological, psychological and sociological factors.

Undoubtedly there is a high degree of validity to Freud's notions in spite of obvious criticisms which it is not my purpose to go into here. Yet there is a high degree of ambiguity to Freud's definition which separates it sharply from the definition I shall shortly present.

Leadbeater's usage of the word "Ego" is as different from Freud's as a computer is different from a brain. When Leadbeater speaks of the Ego (which he always capitalized in accordance with his definition of the word) he is referring to a concept far removed from anything associated with the word, either in common usage or in terms of modern psychology. The closest concept I can think of that is similar to Leadbeater's use of the word Ego is "the soul", except that Leadbeater's definition is much more precise than any meanings usually as-

cribed to the word "soul". Leadbeater's Ego is the essential spiritual and completely nonphysical essence behind the personality and has little to do with the actual personality other than being its power source and occasionally a source of inspiration. What Freud called the "ego", Leadbeater called the "personality". To get a real understanding of Leadbeater's definition of Ego, one must be generally familiar with many Theosophical notions such as reincarnation, the planes, astral bodies and the like. Since these have all been discussed to some extent already, I will assume the reader to have at least a familiarity with such concepts. Given this basis we can say that Leadbeater's concept of the Ego is that it is the permanently reincarnating entity behind any of its various incarnations. This entity dwells essentially on the buddhic plane and incarnates after periods of dormancy by manifesting itself in bodies of mental, astral and physical matter. The Ego is eternal and is a spark of the divine essence that Leadbeater calls the Monad.

Leadbeater's concept of the Ego contrasts sharply with Freud's concept of ego. Each implies an entirely different metaphysical approach to life and human nature, and each refers to altogether different levels of human existence, though interestingly, both concepts were expounded around the same time historically. Freud's concept of "ego" closely matches the concept of "personality", both as it is commonly used and as Leadbeater used the term "personality". Leadbeater's view of Ego has nothing to do with anything normally experienced in the life of an ordinary individual. Leadbeater's Ego is the "soul" or "higher self" spoken of in occult literature. Aside from the fundamental difference in definition, the other factor that delineates Freud's and Leadbeater's concepts is that Leadbeater's definition is very precise in pinpointing a very specific level of existential/experiential, albeit nonphysical, process whereas, like I said above, Freud's view is very imprecise in this respect.

What I envision the ego to be is modeled after Leadbeater's in the sense that I am thinking of a very specific level of process operating in a very specific fashion. However, the actual definition I shall present is much more in keeping with Freud's concept of the ego as related somehow to personality. The use of the word "ego" gained a widespread social usage only after the popularization of Freud's concepts, and in some respects, my concept of the word is an attempt at a more precise formulation of Freud's concept, minus the associated concepts of id and superego. On the other hand, what I see the ego to be is fundamentally grounded in concepts that are elements of Leadbeater's Theosophical world-view, concepts that Leadbeater himself innovated and defined. So what I am essentially doing here is redefining Freud's concept of the ego in terms of Leadbeater's occult view of things.

To define the ego in occult terms we must begin by realizing that our psyche has an anatomy just as does our physical body. Leadbeater lays out exactly and precisely what this anatomy is. It is our nonphysical anatomy; what I will call the anatomy of our psyche. Here I will use the term psyche to denote generally the entire content of our subjective consciousness: our minds, thoughts, feelings, memories, attitudes, expectations, hopes, intelligence, intuition, our dream experience, fantasies and daydreams, and the whole gamut of relatively rare psychic phenomena that occur within our subjective experience such as telepathy, *deja vu* etc. and anything else that is a part of our subjective experience.

This definition of the psyche, I should point out, is not mine, but is based upon the definition put forth by the entity Seth in his book *The Nature of the Psyche*¹, a book channeled through Jane Roberts. Seth's concept of psyche is very broad (as we have seen with

most of his thinking), including not only what is listed above, but essentially all the rest of Nature, both physical and nonphysical. Seth's view is so broad, that to say there is an anatomy, or any kind of structure, to what he calls the "psyche" is to miss the point he is trying to make. Fortunately this need not concern us here, for I am not trying to make the same points Seth was or even attempt to speak from the levels Seth does. My interest is in defining the ego as a functional unit within our psyche, and at the level I am attempting to conceptualize this there is most definitely structure and anatomy to our psychological makeup.

I am to an extent drawing a strong analogy to the traditional anatomy of the physical body when I talk about the anatomy of the psyche. As the physical body is made up of various organs and functionally related and interrelated parts like livers and skeletons, arms, legs, eyes, and the rest, so too is it with our psyche, which is made up of a mind, a spectrum of emotions, intuitional faculties, dream faculties, perceptive faculties, and also an ego. Fundamentally our ego is an organ within our psyche just as our brain is an organ within our physical body.

To more precisely locate the structure and function of the ego as an organ within our psyche, we must first develop a picture of the overall anatomy of our psyche. This we can accomplish by turning to Leadbeater's Theosophical definitions of the constitution of a human. What we are about to embark upon is a brief discussion of occult anatomy vis-à-vis Leadbeater that is somewhat more involved than the earlier discussion.

According to Leadbeater, the physical body of a human that we perceive with our physical senses is but one of several "bodies" that a human actually possesses. A human possesses other nonphysical bodies not perceivable by our physical senses that are, in a sense, layered over or within the physical body. Leadbeater calls these "vehicles" and these are the means or instruments by which the Ego expresses itself on the planes of Nature other than the physical. The vehicles are the etheric, astral, mental and buddhic bodies. Each of these bodies exists on its own plane and is readily perceivable by one possessing the ability to perceive on that plane, and each serves a definite and obvious function in the overall life of the human. As well, each body has its own characteristic structure in terms of the matter of the plane to which it belongs. Each of these nonphysical vehicles will now be briefly discussed so as to create a picture of the anatomy of the psyche.

According to the claims of clairvoyants², the etheric body appears as a "body of light" that is a whitish blue in color, has the actual shape and appearance of the physical body, and extends within an inch or so of the physical body. The function of the etheric body is to convey physical sensations into the consciousness of the Ego (and therefore into the part of the Ego's consciousness that is the incarnating personality as well). The physical body does not feel (in the sense of experiencing sensations associated with the skin, as opposed to "feelings" in the emotional sense) nor does the brain directly convey sensations into consciousness. Physical sensations such as hot/cold, balance, pain, texture and the whole gamut of sensory input are conveyed by the physical senses and relayed through the brain and physical nervous system to the etheric body (via the chakras) which then registers the sensations into consciousness. This is why sleeping or anesthetized people do not feel pain or any other physical stimuli, because these conditions indicate that the etheric body has dissociated from the physical body. Subjectively, the etheric body is felt to be the physical sensations associated with the physical body such as those listed above.

The next body is the astral body. The astral body is the body of emotional perception and emotional feeling as distinct from physical sensation. To the clairvoyant, the astral body is seen as an ovoid sphere of neonish light, extending some feet beyond the physical/etheric bodies and including these within its boundaries. The ovoid shape of the astral body is itself a dynamic cloud of swirling, ever changing colors, reflecting the dynamic and relatively transient nature of human emotions (again, see Figure 6). To the nonclairvoyant, the astral body is felt subjectively as one's emotions such as rage or happiness, jealousy, or kindness, or any of the other emotions within the spectrum of human emotional responses.

Next is the mental body. Again the clairvoyant perceives this as roughly an ovoid sphere of an even more subtle and delicate type of light, extending some distance beyond the astral body, and including the three previous bodies within its boundaries. Here images can be seen to form and fade rapidly reflecting the thoughts within the consciousness of the personality. And as well, such images impart a type of sympathetic resonance to the surrounding mental plane matter, creating an identical image in this matter that will behave in a variety of ways depending on the nature of the thought; this is a thought-form, as has been discussed. Colors are present here like in the astral body though they are of a more permanent character, reflecting the more stable nature of habits of thought as opposed to the changes in moment to moment emotions represented in the astral body.

Finally, for all intents and purposes, the deepest and final body in occult anatomy is the Buddhic body. This again appears as an ovoid sphere extending outwards and encompassing the previous bodies. Little color or activity is observed in this body by those who claim to perceive at this level, and this reflects the general level of evolution of the human race as a whole. What I mean by this is that, subjectively, the buddhic body is the seat of what we might call, for lack of a better term, "spiritual awareness". Spiritual awareness is what R. Bucke called "cosmic consciousness" and is the essence of the true mystical experience. Such a faculty is little developed in the ordinary human being who tends to operate primarily at emotional and mental levels.

We have now provided a relatively precise definition of the anatomy of the psyche, and within this context we shall define and localize the functional process of what I consider to be the ego. What I have tried to convey is a picture of the human psyche in which we see a structure or anatomy to the subjective side of ourselves, and this structure is that described above concerning the various nonphysical bodies and the fact that they surround and interpenetrate the physical body.

Granted, the above descriptions are based on clairvoyant observation and testimony and do not in the least appear this way to us in our subjective perceptions. But likewise, to our subjectivity, the Earth (from our native vantage point on its surface) appears flat and the Sun and stars appear to revolve around the Earth. And as we have indirect means of confirming the actual rotation of the Earth about the Sun, without going into outer space to actually see the situation, so it is with the clairvoyant description of the psyche. We do not need to be clairvoyant to verify the truth of such descriptions because indirect, as well as direct means are available for us to verify the truth of this model. I have discussed this point in detail elsewhere so I won't belabor the point here (see the chapters "Occult Means Of Perception" and "The Psychological Value Of Quantum Theory").

Thus, the human psyche is the sum of these nonphysical bodies as they intercept and surround the physical body. In occult terminology, the totality of these nonphysical bodies is called the "aura", this being the emotional, mental and spiritual atmospheres surrounding an individual. Modern occultists are beginning to refer to the various bodies, or auras as "energy fields". I prefer the traditional term "aura". In this discussion though, I will refer to the totality of our nonphysical bodies as our "psyche", since we normally do not perceive auras, but we are constantly aware of our own subjectivity within our psyche.

Conceptually, this view of the human psyche is like an onion with its many layers, except, though the various vehicles seem to be layered, they are not, and they actually interpenetrate each other and fill the same space. To make an analogy, this situation is similar to the way that the space occupied by a wet sponge consists of not only the material of the sponge but as well by the water saturating the sponge, the air that saturates the water and sponge, and the subatomic milieu that saturates the air, water, and sponge.

Unlike the sponge however, the spaces occupied by our psyche are mostly nonphysical, the only physical level is that associated with the physical body. The etheric body is part of the physical plane as occultists describe it, but relative to our normal subjectivity in which we do not objectively perceive etheric matter, we may take the etheric body to be nonphysical as well. Thus, our psyches, according to the Theosophical scheme, exist primarily outside of physical space and time, though they intersect with it via the physical body. This fact that the physical body is the nexus point for our primarily nonphysical psyche is of paramount importance in defining the ego as I see it, a point which we shall shortly discuss in detail. Essentially then, this is our view of the anatomy of the psyche; the various interpenetrating layers of nonphysical bodies (etheric, astral, mental and buddhic) intersecting the physical world through the physical body, each serving a critically important function in our overall subjective behavior.

And with this picture in mind we can now return to our initial concern of determining more precisely exactly what the ego is. When I said the physical body was the nexus point or point of intersection of our nonphysical bodies this was somewhat inaccurate. In actuality, the physical body is the overall framework that grounds our essentially nonphysical psyche to the physical world. *The actual point of intersection of our nonphysical psyche with the physical world, this actual point is what I consider to be the ego.* Thus, what I will call the ego is a funnel, passageway, tunnel, or channel by which our primarily nonphysical psyche expresses itself in the physical world. The ego is this mechanism or process. In this sense, what our ego is to the anatomy of our psyche is somewhat analogous to what the heart is to the anatomy of the physical body; a valve, a place central to flow, a mechanism that drives circulation.

To even refine this picture somewhat, we can realize that the picture of the anatomy of the psyche drawn out above is lacking in one overridingly important feature; the dynamism of our subjectivity. I alluded to this in mentioning the swirling motion of colors (i.e. dynamic nature of the emotions) within the astral body, but I didn't drive the point home--and now I will. Like our physical bodies, our psyches are in a constant dynamic flux at every level and in every respect. The psyche shares the characteristic with the physical body that, though it has the appearance of a stable form, it is in actuality, a constantly transforming dynamic arrangement at all levels of its structure, a "dissipative structure"³, to use current scientific jargon.

In terms of the static "ovoid spherical" description given above to the astral, mental and buddhic bodies, we can replace this with a dynamic description of something more akin to spherical whirlpools spinning and swirling at any conceivable rate, of colors transforming, blending and bleeding into each other in a dancing interweaving of shapes and textures that subjectively translates into our day to day and moment-by-moment thoughts and feelings, dreams and fantasies, hopes, fears and anxieties; in other words, the whole gamut of our dynamically moving subjective experience.

And just for the record, this dynamic spinning motion that I am attributing to the astral, mental and buddhic bodies is not simply a spinning motion like a toy top. That is, it is not a rotating motion that spins through 360 degrees and returns to its origin. It is a different type of motion that has no actual counterpart in our physical experience, and it could be accurately called a "Möbius spinning". It is a spinning motion that seems to rotate through itself much the way a Möbius strip folds back onto itself. For illustrations of Möbius geometry, see Plate 1. I will clarify this concept and its bearing on the nature of the ego below.

We can now refine our picture of the ego as the nexus point of intersection between our nonphysical psyche and our physical body by realizing that *the ego is the Möbius center of the whirlpool of our psyche*. The psyche is the whirlpool, or cyclone, tornado, or cesspool, as the case may be, and the actual center of this is what I call the ego, and this center is localized around a particular physical body. The precise physical points of localization in which the ego intercepts the body, according to occult teachings, involve the pineal and pituitary glands found in the brain (this is, I believe, what Descartes was referring to when he spoke of the pineal gland as "the seat of the soul"). The ego is the dynamic, two-way gate which allows in one direction our physical experiences to pass into our nonphysical psyche, and in the other direction the ego passes the products of our nonphysical psyche--imaginings, fantasies, inspirations, thoughts and feelings--into our physical experience.

Now, in terms of our subjective experience, what this means is that the ego is the essential "I" of the physical personality. It is the "I" which on one hand has physical experiences living a physical life in a physical realm, and on the other hand is the "I" who feels emotions, thinks thoughts and produces nonphysical responses to physical experience. The ego is the center of the personality, it is the point of nucleation around which swirls or condenses, as the case may be, the memories and emotions, thoughts and sensations that are the personality.

As I see it, the ego is the dynamic control center of the physical personality. And as such it obviously is *the* vital and significant part of the physical personality. The ego is a control source in the sense that a semiconductor is. Though unlike a semiconductor which only has two states, the ego has many states. It is a gate, an energy gate, with many potential states, that is, many potential ways to channel the energy that passes through it. As such it determines *where* the energy goes. Thus, as well as a controller, the ego is an energy source of sorts, being a nexus point for many types of energies. Physical, etheric, astral, mental and buddhic energies impinge together simultaneously on and through the ego, which then gates this energy in accord with internal feedback mechanisms, these being determined at first approximation by the ecosystem of thoughts surrounding the ego (this ecosystem being the personality).

Furthermore, as pointed out above, the geometry of the ego as a nexus point is not a simple circular or spherical opening but a Möbius opening. Let me explain at this point what the

concept of Möbius means in mathematical terms, then I will explain how this concept is related to the geometry of the ego.

Now, in mathematics, the word "Möbius" applies to a special type of a surface geometry, which is illustrated in Plate 1. If you take a strip of paper, twist it once, and paste the ends of the strip together, you will obtain a Möbius surface. This type of a surface geometry is in contrast to a regular surface, such as a normal bracelet that has a width to it. In the case of a normal bracelet, there is a definite inner surface and a definite outer surface. If you start at some point on the outer surface of the normal bracelet and trace a line around the circumference, you will end up back at the point from which you started on the outer surface. Likewise with the inner surface. Most importantly, with a normal bracelet, when you trace out the circumference in such a fashion, you will never start on the outer surface and end up on the inner surface or vice versa. Mathematicians call this an "orientable" surface, which means it has two distinct and separate sides; an inner and an outer side.

Now a Möbius surface, which is easily produced as I described in the previous paragraph, is different from an orientable surface. If you make a Möbius strip and attempt to trace the circumference of this surface, you will find that, instead of ending up at the point you started from, you will end up at the point *underneath* your starting point. To end up at the point from which you started, you will have to trace out *two* full circumferences. What has happened with the Möbius surface is that we no longer have a distinct inner and outer surface. With the Möbius surface, there is now only one surface. That is, the inner surface becomes continuous with the outer surface. Mathematicians call a Möbius surface a "nonorientable" surface because it does not have a distinct inner and outer surface.

And it is this property of the nonorientability of the Möbius surface that is possessed by our egos. What I am saying here is that the ego, as I am defining it, has a very definite geometry and this is the geometry of the Möbius surface. As the point of connection between the physical and nonphysical components of our overall anatomy, the ego is "pointing in both directions", so to speak. The ego points in the direction of our objective, outer physical experience, but it simultaneously points in the direction of our inner, subjective and nonphysical experience. We can think in dualistic terms that there are two distinct "sides" to our experience, these being the objective and the subjective. But such a view is obviously wrong in some sense because we dwell in both objective and subjective spheres simultaneously. Such a dichotomous view sees the ego as being like the normal bracelet (or orientable surface) as having two distinct sides. What I am saying here is that our ego, as the point of intersection between the physical and nonphysical, is more analogous to the Möbius surface in that it does not have two distinct sides, but only appears to do so. Our subjectivity is continuous with our objective existence, and these are continuous in the same sense that the inner and outer surface of the Möbius strip are. Thus we exist simultaneously in objective and subjective spheres of experience.

Such a Möbius geometry also explains where the self-reflective property of our subjectivity derives from. To help understand the meaning of this statement, liken our ability to be self-reflective to two mirrors set up to mirror each other's reflections. This produces an infinite regress of image within image within image, etc. This property is very much like me thinking about me thinking about me thinking...etc.. The geometry of the ego, the Möbius point that is the ego, is very much like these mirrors. However, a better metaphor might be what one

would see if they stood at the center of a sphere whose entire inner surface was a mirror. This property is a result of the Möbius geometry in that we "see" into both objective and subjective directions simultaneously, and this sets up a type of "cognitive or psychological feedback" (for lack of better terms) in our psyche that has essentially the same effect as setting two mirrors face to face. It is this point, or surface of actual feedback that is the literal Möbius space of our moment by moment awareness. It is at this point around which nucleates the elements that make up the personality (these being thought-forms of the astral and mental varieties, as we shall discuss in up-coming chapters).

Now I am aware that I am using this concept of Möbius loosely. I have referred to the "shape" of the ego in quite a few different ways: as a Möbius point, a Möbius surface, a Möbius space, a Möbius spinning motion. Now I believe that there is a definite mathematical and geometrical validity to the Möbius nature of the ego, and in this respect, each of these terms has a definite validity. Yet in major respects, this ideas is also metaphorical. The main use of thinking of the ego as being Möbius in its nature is because the Möbius concept allows us to take something that *seems* to have two sides (inner and outer surfaces in the case of a strip of paper, or a subjective and an objective side in the case of our psychology) and resolve these two sides into one. That is, the Möbius geometry provides a means of defining a continuous relationship between two apparently opposite things. But again, I want to stress that, even though this idea has a useful and heuristic intellectual value, I am here being quite literal as well. Our ego, the point of intersection between our physical and nonphysical psychological components, is literally, in some sense, Möbius in its geometry.

Thus, it is this geometrical property of the ego that gives rise to our ability to say "I...". Therefore, the Möbius, power/energy, and gate functions of the ego give rise inherently to the main qualities we associate with subjective "I" oriented behavior: 1. self-reflection (the Möbius geometry of the ego), 2. will and self-motivation (the power or energy function of the ego point), and 3. self-control as the ability to focus and channel willpower (the gate function of the ego point).

It should be stressed that this picture described above of a functional ego only applies to a physical personality. A discarnate human who no longer has a physical body, a quite acceptable concept in terms of occult and Theosophical contexts, as well no longer has an ego as I am defining the term. The ego is the *interface* between the physical body/physical personality and the nonphysical psyche that is behind or within the physical being. When the physical body is permanently gone (i.e. at "death"), then there is no longer an ego as I am defining the ego. An incidental corollary to this is that communication with "dead" people would be difficult or misleading because they no longer operate in terms of having an ego, or central control center. In a "dead" person, this function gets (presumably) transferred to the Ego (Leadbeater's definition), and the Ego entity most likely does not operate in terms easily conceivable to a physical personality.

Likewise, this model of the ego explains the nature of the dream state. Through intentional effort, one can flip inside out, so to speak, so that our normally internal subjective world becomes seemingly external in our perception, and thus the external world of our normal consciousness becomes internal relative to the Möbius point of the ego. Such a flipping inside out is what happens when we dream at night. This is also the mechanism behind any mode of

travel in the nonphysical planes ranging from lucid dreams to out-of-body experiences through to the advanced abilities of the trained seer. However, in these cases of lucidity, what has happened is that the continuity between the seeming subjective and objective features of the personality have become so continuous as to be indistinguishable. In a sense, my use of the word ego has a meaning that is analogous to Leadbeater's concept of Ego, in that each of these concepts refers to a more-or-less permanent dynamic center around which revolves a more-or-less stable psychological entity. Leadbeater's Ego may have an existence of millions of years (if such time designations even make sense in a nonphysical context!), whereas the physical personality exists for roughly eighty years, but that is not the point. The idea is that Leadbeater's Ego is the point or center around which forms a stable entity: the incarnating soul with its mental, astral and physical bodies. The ego as I am defining it is the point around which forms the stable entity we think of as the physical personality. Again, we are faced with the situation "As above so below". The ego as I am defining it is a process self-similar to the Ego as Leadbeater defines it.

Since the concept of ego as I am presenting it here is one of the basic elements of our physical personalities, it is in this sense that this definition of the ego is a refinement of Freud's definition. Freud's definition of ego deals essentially with the physical personality and so does my concept of the ego. However, since we have turned to Leadbeater's Theosophical contexts, we no longer need to keep the notions of id and superego since these are easily replaced by more useful and refined concepts.

The id, representing as it does biopsychic functions and forces within the physical personality, is replaced by understanding the feedback generated by and through the ego (as I have defined it) with regard to how the physical and nonphysical structures interact. Such occult notions as kundalini, chakras and the etheric body become useful in this regard. And such notions coupled to modern genetic, medical and psychiatric concepts would give a vast understanding of the essentially physical, biopsychic levels to the human being.

And on the other hand, the idea of superego is replaced by a whole battery of concepts derived from Theosophical teachings relating to thought-forms and how these impact on an individual (as will be discussed in upcoming chapters). Again, the coupling of such notions with current thought in anthropology, sociology and the like give a vast understanding of the global forces that can impact on an individual human being.

Now that we have established this new definition or model of what the ego is, the obvious question is: So what? What good is this new definition? At this point we will begin to explore some of the ramifications of conceptualizing the ego in the terms I have done above.

First, as briefly mentioned above, this model explains at least two classes of psychic phenomena: the nature of the discarnate human, and the dream state, including lucid dreams. These are not trivial matters. From parapsychological and psychological perspectives, this model illustrates the explanatory power of coupling scientific and occult notions (in a geometrical context).

In this regard though, we come to the issue of verification. How can this model of the ego and its relevance to the above parapsychological phenomena be verified by experimental means? Well, for one, the way I realized the essence of this model was by directly perceiving

the fact of my own sense of self when under the influence of hallucinogenic drugs (which is discussed in "Biological Perceptions").

However, this method is not effective in all cases even with the same individual. A second possible line of verification could be the direct apprehension of this fact via yogic methods. J.J. van der Leeuw describes his own personal mystical experience in terms identical to how I describe the process of dream lucidity, and, it is likely he achieved this experience through meditative means. His description is:

"...when we succeed in going through our centre of consciousness and emerge on the other side, we do not so much as realize a new world around us as a new world within us. We seem to be on the surface of a sphere having all within ourselves and yet to be at each point of it simultaneously."⁴

This "centre of consciousness" of which van der Leeuw speaks is indeed exactly what I am calling the "ego". The ability to pass through this point is a function of the Möbius geometry of the ego. And his metaphor of this experience in terms of spherical geometry is quite similar to those I presented above. I think it is reasonable that metaphors vary somewhat due to the subjective nature of experiencing the ego in this fashion. Yet, again, I want to stress that this ego point I am defining here is exactly our sense of "I-ness" in our normal waking consciousness. The ego obviously possesses strikingly different properties depending upon from which plane it is viewed.

In terms of legitimized science, and especially the psychological sciences in which this discussion is relevant, these hardly amount to verification. But as I pointed out elsewhere, the bottom line to all my discussions in this work is that today we are in the midst of paradigm transformations and scientific revolutions (as defined by Thomas Kuhn), and within the paradigm I am developing here these are quite legitimate means of verification. Thus, we will simply have to wait for those of the old paradigm to die off.

Now, though this model has a usefulness to parapsychologists, does it have any relevance in terms of our normal psychology and everyday subjective experience? Indeed it does. This model provides a means to understand our normal daily personality and the pathological states it can potentially fall into. Let us discuss this point now in some detail.

In this model, the ego is seen to be the control system of physical experience. The ego, my and your sense of "I-ness", is the central control center or manager of the personality. The personality itself is the configuration, arrangement, gestalt of thoughts and emotions, as well as sensations that surround the ego on the physical level. In terms of the nonphysical anatomy of our psyche that is discussed above, our physical personality is the reflection, or projection of our nonphysical psyche into our physical waking experience. Our nonphysical psyche encompasses our physical personality, and our physical personality is a self-similar reflection of our nonphysical psyche. They are related, in one respect, as is an image to its reflection, not geometrically as mirror images, but in the sense of projecting an image into or unto another medium. In this case it is the projecting of the nonphysical psyche into the medium of the physical plane. The personality is the reflection of our psyche that fills our brain and body.

I want it to be perfectly clear that I am distinguishing between the ego and the personality; *the ego and the personality are two totally different, though related, phenomena*. As I stated in Part 1 of this discussion, the personality as I see it is literally an ecosystem of nonphysical entities, a "persona" that covers or surrounds the ego point. This ecosystem is itself the literal basis of the gestalt nature of our minds. These nonphysical entities, the thoughts and ideas, feelings and such that make up the subjective content of our personality are *literally* organisms that are symbionts with use⁵ (this concept is discussed in detail in the chapter "A New Concept Of Motion"). We need ideas and they need us, thus there is a symbiotic relationship. However, *we* are the host organism, and the thoughts and feelings making up our personality are the symbiont. It is the ego's responsibility to manage this ecosystem which defines its personality.

This situation is highly analogous to the symbionts of our physical bodies. Our skin, intestinal tract, mouth, genitals and other body locations are sites of symbiotic interaction with bacteria. In the same sense that we must eat healthily and wash correctly to maintain this bacterial ecosystem and its functional relationship with our bodies, so too we must do the same with our personalities and the symbiotic, nonphysical organisms that make up our personalities.

Thus we have an imminently practical model of the relationship between self (ego or "I-ness") and personality. This model is practical because it suggests readily the nature of psychological hygiene and psychological disease. Within the context of this model, it becomes apparent what types of pathologies the ego can encounter through an unhealthy relationship to the ecosystem of symbionts that is its personality.

Let us begin the discussion of psychological disease by considering what happens if we do not wash ourselves. When we do not wash ourselves, germs (bacteria) and other physical entities begin to grow out of control all over our body. They make us smelly, soiled and prone to further invasion by other organisms such as fungi and insects (lice, etc.). Under such unhealthy conditions, these organisms literally invade our physical bodies, steal our energy away from us and can eventually kill us if they are not checked.

It is exactly the same case for our psyches if our ego does not keep its personality clean. The ecosystem of our personality is just like the ecosystem that lives on and in our physical body. The thoughts, feelings and attitudes that make up our personality are organisms whose primary intent, just like the bacteria that live on our skin, is to stay alive. These organisms of the personality are not concerned about the ego and its body, only themselves, just the same way that bacteria do not even know that they live on us. If we allow the organisms of the personality to grow unchecked, which they readily will just like bacteria, then the effect is the same as if we don't wash our physical body. The personality will become dirty, smelly and soiled. The natural energy flow functions of the ego will be blocked. The personality will become heavy and weighed down by the accumulations produced by the unchecked multiplication of thoughts and emotions, and this will stifle the ego. The personality will be diseased; it will not operate properly under these conditions. A diseased personality will lead to poor psychological and social behavior. As well, the psychological disease state will eventually spread to the physical body by sympathetic resonance processes.

Now let's take this analogy and put it on a more personal level because the previous paragraph is interesting and all, but highly abstracted from our actual experience. The essential

question is: What is this state of psychological disease in terms of our subjective awareness, our actual state of mind day to day? What I am really talking about here is habits, habits of thought and habits of emotion. Since these things are symbionts, it is natural that we should have these habits. I need a name for example (calling me "Don" over and over again is a habit of thought), and I develop characteristic patterns of speech and thought and of emotional reaction to circumstances. The problems come when the habits start to dominate. I smoke too much, or I swear all the time without thinking about it, or I can't control my temper, or I am so caught up in my beliefs that I can't accept new things that are not a part of my beliefs. It is only when these kinds of circumstances begin that the ego is beginning to lose hold of the organisms in the personality. Thus, adverse circumstances come about; I get sick from smoking too much, or I lose friends because of my temper, or I cling to out-moded and obsolete ways because of my belief system. And unless the ego checks these habits and corrects them the damage will accelerate in a negative feedback loop until the ego is almost powerless and at the mercy of the habits it has allowed to accumulate in its personality. At this point, one dies from cancer for having smoked their whole life, or one is a mean and lonely old person with no friends because of an uncontrollable temper, or one has severely retarded other's innovations as a result of being too caught up in their own beliefs.

This stuff is all very real. We don't understand that our egos, our sense of who we are, is different from the ideas that surround this sense. This is a very common teaching in the occult. We think we are the ideas in our mind, and the ideas, given an inch, will go a mile. Our personalities become walls, fortresses and we become overwhelmed by the forces that we are supposed to be managing. The result is that it clogs up the works, clogs up our minds and emotions. Neurosis set in, psychic walls are built, repressions form holding in stagnant and unhealthy energy. We become like a dam ready to burst.

But the energy does come out somehow; we get sick and become physically diseased, or we treat ourselves and others badly, and we have strange dreams when we sleep at night. We allow our habits to become our life way beyond any healthy extent and they use us to perpetuate themselves. And this effect is not only on an individual and personal level but at the social level as well. Whole societies will destroy each other over ideas, beliefs and ways of life. The whole process of society itself is a tribute to the power of thoughts in our life.

In the final analysis it is, of course, an issue of balance. We need ideas and they need us. It is only when we don't keep the ideas in check that they will begin to interfere with the natural courses of human experience.

Notes: Chapter 10

¹Roberts, (1977).

²For clairvoyant descriptions of the human nonphysical vehicles see Hall, (1972), Leadbeater, (1980), Karagulla and Kunz, (1989).

³A dissipative structure is, according to Ilya Prigogine: "Unlike equilibrium structures, dissipative structures are maintained in non equilibrium environments in which there is an exchange of matter and/or energy with the outside world" (from Prigogine, 1974).

A dissipative structure is a complex structure that exists in space and time due to the presence of nonequilibrium driving forces. This is a concept from the theory of irreversible thermodynamics. Now, in applying this concept to nonphysical phenomena such as auras, or the nonphysical bodies, we are obviously *not* dealing with physical space-time structures. However, the use of the term "dissipative structure" in the context of nonphysical realities is meant to imply that nonphysical phenomena are subject to the same laws and processes as are physical nonequilibrium phenomena. That is, the laws of thermodynamics are expected to hold in the nonphysical worlds. Time and irreversible evolution do have meaning in the context of nonphysical realities, as the quote by Leadbeater on page 59 would seem to indicate. How the behavior of nonphysical thermodynamics could be formulated mathematically would be completely dependent upon how the planes of Nature are mathematically modeled in relation to the physical plane. That is, a first requirement for the construction of a thermodynamics of nonphysical phenomena would be to have an accurate model of what *time* is in the context of nonphysical realities. Unfortunately, this is not an easy issue in any sense.

⁴van der Leeuw, 1968, page 41.

⁵This is not a new idea. See the last chapter of Dawkins, (1976) where he presents the idea of "memes". I am describing memes here albeit from a more personal or subjective perspective. The relationship between memes and thought forms is discussed in detail in the chapter "A New Concept Of Motion".

Chapter 11. The Psychological Value Of Quantum Physics

Here we shall refine further the ecological view of psychological process that we started in the previous chapter. We are going to take the framework we have built so far and incorporate occult and scientific ideas into it. In doing so, we will come to develop an ecological approach to psychological processes that is grounded in mechanistic principles analogous to those found in modern physics.

I said earlier that parapsychology, and the Western approach in general, to things hidden, is one of a preoccupation with effects in spite of a fundamental ignorance of the causes. This is a preoccupation with form at the expense of substance, something at which our civilization excels. In the quest to alleviate intellectual discomforts that result from this situation, some parapsychologists have turned to modern physical theories in the hope that these may provide alternatives by which to conceptualize parapsychological phenomena. Often such discussions focus either on: 1. the EPR debate and issues of nonlocality and causality (as discussed at the start of chapter 6), or 2. the holographic view of physical interrelationship represented by David Bohm's "implicate order" or Karl Pribram's holographic model of neurological processes¹. These philosophies of modern physics share, among other things, the fact that they discuss nonclassical modes of communication. Thus parapsychologists associate these nonclassical interpretations as potential explanations of parapsychological phenomena.

Let me make my terms clear: When I say "parapsychological phenomena", I mean things such as telepathy, telekinesis, OOBs and other phenomena defined by parapsychology (I should also include here the mystical experience as it is discussed and conceptualized in the science/mysticism debate). In my terms, these phenomena are but one type of example of "hidden phenomena". These are the "socially accepted" hidden phenomena, the seemingly unusual and arbitrary assortment of so-called "psychic abilities" that our entire culture has mystified and decontextualized into circus side-show attractions. And, in some regards, the entire orientation of parapsychology is but an exemplification of this cultural attitude, albeit seemingly dressed in the respectable clothes of science.

Aside from this level of criticism, parapsychology, and the science/mysticism debate (as discussed in chapter 2), also make the mistake of adopting a purely physical view of "that which is real" when it turns to modern physics (see the quote by Lawrence LeShan on page 86). It is again making the mistake of trying to understand the nonphysical in terms of the physical. When I say "hidden phenomena" I am using a term that implies the existence of nonphysical worlds that, in a practical day to day context, are the worlds of our sensations, emotions and thoughts. These are the nonphysical objects that exist in nonphysical worlds, yet have obvious and direct impacts on the physical level. These are simply not what modern physics is talking about when it comes to nonclassical modes of communication (again, see discussion starting chapter 6). In looking to modern physics the parapsychologists seek causes in the speculations and theories made of (a small sub-set of) observed physical events.

In other words, accepting the implications of the existence of (seemingly invisible) nonphysical worlds, I do not think that the problem lies in modern physics inability to conceptually deal with hidden phenomena, I think the problem is that parapsychologists focus on the wrong levels of modern physics because they neither understand physics on its own terms, nor grasp the concept of "hidden phenomena". When parapsychologists, or anyone else for that matter, turn to Bohm or Bell, they are turning to broad philosophical interpretations of the past 100 years of *physical* experimentation. This is a philosophical level that very rightfully belongs to modern physics. Bohm is concerned with a broad interpretation of the theoretical basis of modern ideas in physics, and the Bell issue rests around the (seeming) EPR paradox and the associated technicalities. Both of these concerns are related to the issue of "hidden variables" in quantum mechanics. These are ultimately arguments and ideas used to justify the present condition of modern physics. But it is a misleading level for parapsychologists to turn to because on it, "hidden things" (i.e. the nonphysical worlds of our subjectivity) are truly hidden.

But if we admit that parapsychologists look to the *wrong* levels of modern physics, then it is implied that perhaps there are other ways in which modern physics may aid in our understanding of hidden phenomena. An alternative interpretation is this: If we grant the existence of nonphysical objects and nonphysical worlds, then perhaps it is reasonable to ask "Do these nonphysical objects behave like classical phenomena, quantum phenomena or neither?" This is a different type of question than what parapsychologists ask. We do not want to seek causes in physical theory, instead we want to borrow concepts and make analogies. We are *not* seeking justification in physics for the existence of hidden phenomena, we are borrowing ideas from physics if these ideas prove useful in describing the behavior of nonphysical phenomena. This is a big difference and I want to make sure it is clear to the reader.

So how do we begin to answer this question? We must first be capable of observing nonphysical behavior. Once we become familiar with the patterns of behavior exhibited by nonphysical objects, then we may look to physical theory to see if descriptions of analogous patterns exist. What this line of questioning will allow us to do is display analogous patterns of behavior in both physical and nonphysical matter. Incidentally, to the degree that this may be successfully accomplished, then to that degree we will also have effectively explained one aspect of the meaning of the Hermetic Axiom, "as above, so below", in that perhaps there are principles of behavior common to both atoms and humans (or more technically, microscopic and macroscopic phenomena). In scientific terms, such a demonstration would illustrate the inherent self-similarity of Nature. Let us now explore this line of reasoning.

First, we must be capable of observing nonphysical phenomena. But such a task precludes some means of conceptualizing nonphysical phenomena. Without a means of conceptualization, there is nothing to conceptualize. In our human terms, a thing does not exist until we give it a name. This exact case is proven by the very fact that we are constantly being bombarded by nonphysical stimuli, yet we are mostly unaware of this as a thing in itself because, as I have discussed, we have no clear and intentional vocabulary for expressing our nonphysical perceptions (and because Kant got down on the idea of "things in themselves").

As I have explained but will repeat here, if we look at the terms we commonly use to express our nonphysical perceptions then my points become very clear. When we have the experience of understanding, we say "I see" and when we experience emotions we say "I feel".

But feeling and seeing are very distinct properties of our physical body, and though suggestive, tell us little about the actual nature and operations of our minds and emotions. This shows us that even in our common language we still conceptualize nonphysical events in physical terms. This must be kept in mind as we proceed, for confusion can quickly result if we attempt to develop a language of nonphysical phenomena unaware of how deeply rooted our everyday language's inability is to clearly indicate nonphysical events. One only needs to attempt to study modern social sciences (including modern psychology) to observe this type of confusion. Again, I cannot resist pointing out once more that the irony of all of this is that nonphysical events are the most obvious and familiar events in our lives. Are they so obvious that we just overlook them? Or are we perhaps incapable, or at least afraid, of facing up to what is hidden underneath the veneer of our outer existence? As I discussed previously, I think the case is that nonphysical events are simply so immediate and such fundamental factors in our everyday experience that they themselves blind us from seeing them for what they are.

At any rate, the point is that we do not have a clear means of conceptualizing nonphysical events. In this respect we can again turn to occult terminology since the occult is, as should be clear to the reader by this point, the study of the nonphysical. This alternative has obvious advantages and disadvantages. The advantage of adopting occult terminology is that it gets us used to thinking in nonphysical terms. When we discuss auras and chakras, kundalini, thought-forms and other occult concepts we open ourselves up to the objects and process of the nonphysical as it is understood in occult teachings.

On the other hand the disadvantages of the occult are, first, it is easy to get sold on some particular metaphysical system. In some respects this is not a bad exercise to go through, but in terms of developing a vocabulary of nonphysical events this would only be a hindrance. And secondly, as I have mentioned in passing already, most occult concepts have their origins in altered states of consciousness, usually those that are trance induced. Thus, occult concepts tend to describe nonphysical realities that are not physically perceivable. Now my attempts here to describe nonphysical realities are intended to show that significant aspects of our physical experience are not physical in terms of physics or as is commonly understood. This is a fine distinction; the occult terminology tends to describe nonphysical events as they are perceived in nonphysical states of consciousness, these states being different from but not unrelated to our normal physical consciousness. I am interested in discussing nonphysical events as they are perceived from our usual states of physical consciousness: being awake and dreaming. What we will see, however, in turning to occult terminology as a means for conceptualizing the nonphysical facets of our waking life is that by understanding these terms, they will reinforce our perceptions and understandings of the nonphysical facets of our normal waking life.

What all the above talk boils down to is that we shall use occult terminology and concepts to describe the nonphysical facets of our waking experience. Once having defined these concepts, we will then have a vocabulary to discuss the patterns of behavior of nonphysical objects. I have discussed what I mean by nonphysical objects in other essays in some detail. Here I will summarize these ideas in a more concise fashion. Broadly speaking, there are two main classes of nonphysical objects which are observable in our waking experience, that is, aside from our very consciousness itself, but this is a different matter altogether². These two classes are emotional (astral) objects and mental objects. Or more

personally speaking, these are our emotions and thoughts. Neither of these classes of objects may be weighed, photographed or measured by any physical means, and neither may they be perceived by our physical senses. But likewise, one cannot deny that these exist alongside physical matter within our waking experience in the physical world, and that we perceive these via our nonphysical senses of emotion and mind. Thus, thoughts and emotions are the nonphysical components of our waking experience.

How then do occultists conceptualize thoughts and emotions? I will now turn specifically to Besant and Leadbeater because their ideas are in many respects the most clear and definitely the most amiable for my purposes here.

The complete paradigm that Besant and Leadbeater worked within is quite beyond the present scope of this discussion (for a summary of their world-view see the discussion in section 5.1). However, the elements of their paradigm that are relevant to the discussion are roughly as follows.

Leadbeater constantly pointed out that we are immersed in a great sea of vibrations and that our physical senses respond only to a very small range of those vibrations. Consider his statement:

"As a matter of fact there exist vibrations of every conceivable degree of rapidity, filling the whole vast space intervening between the slow sound waves and the fast light waves; nor is even that all, for there are undoubtedly vibrations slower than sound, and a whole infinity of them which are swifter than those known to us as light. So we begin to understand that the vibrations by which we see and hear are only like two tiny groups of a few strings of an enormous harp of practically infinite extent, and when we think how much we have been able to learn and infer from the use of those minute fragments, we see vaguely what possibilities might lie before us if we were enabled to utilize the vast and wonderful whole."³

This "infinity of vibrations" Leadbeater describes is a fact scientifically established beyond any doubt. Consider for example the spectrum of electromagnetic vibrations (i.e. electromagnetic radiation, which henceforth I shall abbreviate as EMR) of which we only see a very narrow range which we call visible light. But we know from the effects produced that other regions of this spectrum exist such as the x-ray, ultraviolet, infrared, microwave, radio, etc., even though we (supposedly) cannot directly perceive these ranges in any fashion. These are the invisible facets of the physical world. Occultists refer to this level of physical matter as "etheric" matter. This distinction rests on the fact that what we call "physical" is that which we can perceive with the senses of the physical body and measure by physical means, and that which is "etheric" is that which we cannot perceive (at least etheric vibrations are not considered as such in ordinary everyday and scientific discourse), but can still measure by physical means. But there is a third level still to this great sea of vibrations according to Leadbeater; that which we cannot sense with our physical senses nor measure by physical means. It is this third class of vibrations that I have been referring to as the nonphysical. This third class of vibrations are what occultists refer to as the "planes of Nature". Obviously, the implication of this definition of non-

physical matter is that we can perceive nonphysical matter by nonphysical means (as discussed in chapters 7 and 9).

It must be made clear that when Leadbeater speaks of "vibrations" what he really means is what we normally call "matter". Leadbeater, as is crystal clear in his writings, envisions a great spectrum of grades or types of matter, a graduated spectrum from the heaviest and coarsest to the finest and lightest. That is, *physical, etheric and nonphysical vibrations form a continuous spectrum of matter*, according to Leadbeater.

From a scientific point of view though, there is a problem of terminology when we discuss Leadbeater's ideas. He uses such terms as "density", "heavy", "rate of vibration", etc., when discussing this gradation of types of matter. Now many terms he uses have very precise meanings to scientists and it is often the case that he uses such terms in a suggestive manner as opposed to a technically precise manner. Thus, we must keep in mind that often the literal scientific definitions cannot be applied.

Leadbeater, when describing this great invisible spectrum of nonphysical matter/vibrations often draws analogy to the various states of physical matter. Physical matter can roughly be classified according to the following scheme: solid, liquid, gas, plasma, fire/heat, and light (EMR). Without getting too technical, this spectrum of physical matter can be seen to range from states of high density to states of progressively lower density. And it is through this concept of a spectrum of density that Leadbeater tries to convey the properties of the nonphysical vibrations within which we are immersed. Thus, what solid matter is to the spectrum of physical types of matter, the entire physical plane is to the nonphysical planes. Likewise, astral or emotional plane matter corresponds to the liquid state, mental plane matter to the gaseous state, and so forth. This line of reasoning is, as a matter of fact, the basis for the meaning of the ancient concept of the five elements of earth, water, air, fire and ether, that I discussed in chapter 2. These are meant to be symbols of the nonphysical planes of Nature, and of their relative relationship to the physical plane.

Now on the surface this analogy seems only to have a limited range of heuristic value when we consider how scientists think about the known states of physical matter. Scientists generally do not conceptualize physical matter as a gradation of density types. Some liquids, for example, are more dense than some solids (in the technical meaning of the word in which density is the ratio of mass to volume).

Normally, scientists think of the states of physical matter in terms of the relative arrangement of the atoms that constitute the matter. Thus, solids are states of matter in which the atoms or molecules are fixed relative to each other. Liquids are states in which atoms or molecules move relative to each other but still form a coherent mass when in a container. Gases are characterized by the fact that atomic or molecular motions are assumed to be highly independent of each other and no coherent mass is ever formed. Plasmas are states of highly ionized matter with properties roughly similar to gases; in a sense plasmas are magnetic gases. How the states of fire, heat and EMR fit into any type of unified classification of physical matter is unclear. Light (EMR), for example is assumed to have no (rest) mass, so to speak of the density of a single photon is meaningless. Also, today we know of another state of matter and that is nuclear matter. In terms of density, nuclear matter is characterized by the peculiar property that all nuclear matter seems to have the same density⁴.

So in terms of density and physical states of matter, Leadbeater's analogy is a vast oversimplification. Yet, I think there is something very valuable and extremely suggestive about Leadbeater's analogy. First off, it must be kept in mind that his purpose is to convey a sense of the relative relationship between physical and nonphysical matter. And if we think not in terms of density, but perhaps in terms of "tenuity", then possibly we can make more reasonable sense out of what Leadbeater is trying to say. In this fashion we will not confuse ourselves with scientific technicalities. Thus liquid is more tenuous than solid, gas more tenuous than liquid, heat more tenuous than gas, fire more tenuous than heat, and light more tenuous than fire. I do not think at this point that we need overcomplicate this scheme by trying to fit in plasmas and nuclear matter, for we are analogizing here with the intent to understand the relationship between physical and nonphysical matter, not contrive a new scheme for classifying physical matter.

Thus we have now the concept of the relative tenuity of states of matter. By this I mean the relative substantialness of a state, its relative "solidness" so to speak, as illustrated by the relationships stated in the previous paragraph. So on this basis, what Leadbeater is claiming is that nonphysical matter is, on the whole, not only more tenuous than physical matter, but the relative tenuity of nonphysical states increases as we go further beyond physical states. Thus, etheric matter is more tenuous than physical matter, but less tenuous than astral matter. Likewise, astral matter falls between etheric and mental matter in increasing tenuity. Furthermore, if light is the most tenuous of physical types of matter, then this suggests that nonphysical matter in some respects is like light, although progressively more tenuous.

Now in chapter 9, I have presented the occult claim that etheric matter is the medium through which we sense physical sensations (via the senses of the physical body), and that astral matter is the medium through which we sense emotional sensations (via our emotions), and that mental matter is the medium through which we sense thoughts (via our minds), and even that buddhic matter is the medium of a higher faculty that may be labeled as "spiritual insight".

The matter of these planes corresponds *in a very definite and literal sense* to progressively more tenuous facets of human subjective content. Emotions are less substantial, more tenuous than our physical sensations. Yet on the other hand, emotions are much "heavier", or less tenuous than thoughts. And spiritual insight is fleetingly tenuous compared to our thought patterns. And since etheric matter is the next in tenuity beyond electromagnetic radiation, then etheric matter must be some type of tenuous light, a type of light that is "less heavy" (meaningless as this may sound to a physicist) than physical light. Likewise, albeit of a progressive tenuity, with emotional and mental matter. This scheme suggests that physical light (i.e. electromagnetic radiation) is the closest approximation to the nature of etheric, astral, and mental matter that we know of in the physical plane. The analogy may be crude but it is extremely useful. It suggests that cognitive functions in the brain may depend on light to a great extent (as opposed to only electricity as is currently believed). Incidentally, in this regard, it is interesting to note the religious uses to which the concept of light has been put. Furthermore, clairvoyant perceptions of the etheric, astral and mental planes speak of these planes as being made of a type of light which is "very delicate" compared to physical light.

This is an extremely interesting line of thought because it suggests that there is a definite relationship between physical and nonphysical matter. They are not distinctly different things, but *gradations* of the same thing. Also, this line of thought is extremely interesting because it

posits that objective things (physical substance in whatever state) are, in terms of this postulated gradation, continuous with subjective things (sensations, emotions, thoughts and beyond). Accepting these two ideas opens up a Pandora's box of understanding that has vast implications on many levels.

We are very used to the dichotomy between our internal subjective experience on the one hand, and the idea that there is a real and objective world quite independent of our subjective experience on the other hand. Thus it is thought in psychology, and even seems to be the case in our everyday experience, that thoughts and emotions are in some sense or another internal subjective events quite different in form, and operating under very different principles, from events in the objective world.

However, in the context of Besant and Leadbeater's world-view, this is not the case. The essence of their occult psychology is that we emit or project our thoughts and emotions outward into our external environment. However, we do not project our thoughts and emotions into the external physical world, but into the external mental and astral worlds, respectively. But the astral and mental worlds *are* the spaces of our subjective experience, and we are constantly surrounded by them as we are surrounded by physical space, even though we do not perceive these spaces in the same fashion as we perceive physical space. But the astral and mental worlds, which we perceive with our emotions and mind, interpenetrate physical space. Thus, our subjective sense in physical space is actually objective in the astral and mental worlds.

In Besant and Leadbeater's context, we quite literally shine our thoughts and feelings much the same way that a light bulb shines. As a light bulb emits vibrations (light waves) into the physical world that we then perceive as light, so too do we emit from ourselves astral vibrations into our surrounding astral environment which are then perceived as emotions. Likewise, our thoughts can be seen (clairvoyantly) to be mental vibrations (thought-forms) that we emit into the surrounding mental environment, and these mental vibrations we perceive as thoughts and ideas. And this is the analogy that shall serve as a basis for our application of physical ideas to nonphysical events; that we shine our thoughts and emotions into their particular worlds as a light bulb shines its light into the physical world⁵.

Let us carry this analogy further. Today, the process of a light bulb shining light is understood in terms of quantum mechanics. The light bulb is called a "source" (actually it is the electrons of the tungsten filament with electricity coursing through it that is the source), and the light wave is known to be electromagnetic radiation. Thus to a quantum physicist, a shining light bulb is seen as a process of electromagnetic radiation emitting from a source. On close inspection, at a microscopic level, the electromagnetic radiation is seen to be a stream of discreet packages of energy called "quanta", even though at a macroscopic level we perceive the light to be a wave. Quanta of electromagnetic radiation are called "photons" and are distinguished from other types of quanta (such as subatomic particles or atoms) by the fact that photons always move at the speed of light and have zero (rest) mass. The wavelength of a light wave is related to the energy of the photons that make up its fine structure by the equation:

$$E = nh?$$

This equation, known as the Plank equation⁶ says that the energy (E) of a photon is proportional to the frequency (ν) of the light. The constant of proportionality (h) is known as Plank's constant, and (n) is called a quantum number. What this equation says (in the de Broglie context) is that something with the wave characteristic of frequency can also be thought of as something with the particle characteristic of energy (energy in this context being related to momentum). Thus, in terms of quantum mechanics, the shining light bulb is seen actually to be an energy source that is emitting streams of discreet particles called photons. In turn we *perceive* this discontinuous stream of photons to be a continuous stream of light waves of a characteristic frequency, or color in the case of visible light.

And very surprisingly, the quantum view of a shining light bulb is practically qualitatively identical to Besant and Leadbeater's view of emotional and mental nonphysical processes. The following quote is taken directly from Besant and Leadbeater's book *Thought-forms* and describes the creation of a thought-form:

"Every thought gives rise to a set of corresponding vibrations in the matter of this body (the mental body), accompanied with a marvelous play of color, like that in the spray of a waterfall as the sunlight strikes it, raised to the nth degree of color and vivid delicacy. The (mental) body under this impulse throws off a vibrating portion of itself, shaped by the nature of the vibrations - as figures are made by sand on a disk vibrating to a musical note - and this gathers from the surrounding atmosphere matter like itself in fineness (at the same frequency) from the elemental essence of the mental world. We have then a thought-form pure and simple..."⁷ (parenthetical remarks are mine)

Not to belittle the colorful and poetic description of the emission of a thought-form that has been provided for us, let us try to distill out the essence of what is being said in this quote. The following discussion will make the distinction between how a clairvoyant would see the process and how we, as nonclairvoyants, would subjectively "feel" the process of thinking.

According to Besant and Leadbeater, a thought-form begins as a vibration in the mental body. The initial impulse of any thought is the *intention behind the thought*. This initial intention and its accompanying spray of colors leads to the vibration of the mental body as described in the quote above. This intention creates a resonance in the surrounding mental body which then transfers to the surrounding medium of the mental plane. To a nonclairvoyant, this series of processes is not perceived as such and one would simply seem to be thinking a thought. In other words, what we perceive as the subjective experience of thinking a thought, the clairvoyant perceives as a series of complex processes beginning with the appearance of an intention in the mental body (as indicated by the "spray" of colors) and the resulting resonances of the mental body and surrounding mental space.

However, after the idea has been thought, the nonclairvoyant--that is, you and I--are completely unaware of what happens to the idea we just thought. As far as you and I are concerned, the thought is simply gone and we move on to the next thought in our subjective awareness. We nonclairvoyant people perceive our own subjectivity to be a *continuous stream* of idea after idea after idea. But this is not so to the clairvoyant who is observing us

think. The clairvoyant perceives our mental body vibrating at a certain frequency and in a certain shape and thus "sees" the contents of our mind. Figure 6 shows a drawing of how thought-forms fill the surrounding mental space and are thus, clearly visible to the clairvoyant. This is actually the true means by which mind reading and telepathy occur. Our minds and emotions are like an open book to the skilled clairvoyant.

But the story does not end here for the clairvoyant observer. As our mental body vibrates (and we are in the middle of experiencing a thought) the clairvoyant observes that our vibrating mental body sets up a resonance with the matter of the mental plane. That is, the surrounding mental plane begins to vibrate in the same shape as our mental body. This occurs, as stated in the above quote, by a process of sympathetic resonance. Thus a wave is set up in the surrounding mental space that is not unlike the concentric waves that resonate out from the point at which a rock is dropped in the water.

So far the clairvoyant has observed three separate processes; first, the appearance of an intent in the mental body (as indicated by the spray of colors), second, the vibration of the subject's mental body giving form to the thought, and third, that a resonance is set up in the surrounding mental space that has the same shape and frequency as the subject's mental body.

There is a fourth process described in the quote above which is involved in the generation of a thought-form. The resonance set up in the mental plane attracts to it material of the mental plane, which Besant and Leadbeater call "elemental essence", and this elemental essence "clothes" the vibration, or assumes its shape. That is, the elemental essence *ensouls* the vibrational pattern in the mental space surrounding the mental body, and at this point we have a functioning thought-form. So then, according to Besant and Leadbeater, the thought-form consists of two main ingredients: the vibrational pattern set up in the mental environment that originated in the subject's mental body (mind), and the elemental essence that essentially precipitates or nucleates around the vibrational pattern. This elemental essence is the actual matter of the mental plane (or astral plane depending on the nature of the thought), and is like a glue that holds the vibrational pattern in place after we are done with a thought. And it is this elemental essence that gives the thought-form *a life of its own* (see the quote below by Annie Besant). The fact that thought-forms have lives of their own is the basis upon which I earlier spoke of thoughts and ideas as being symbionts within our minds. This issue of the symbiotic nature of thoughts will be pursued in greater detail in the chapter "A New Concept Of Motion".

Let us take this description at face value and compare it to our quantum mechanical view of the shining light bulb. What we subjectively perceive when we think is a steady stream of thoughts. We are completely unaware of the fact that each thought we think causes the formation of a thought-form in the likeness of the thought in the surrounding mental plane. But what the clairvoyant sees when a person thinks is the emission of a steady stream of thought-forms, or *discreet mental objects* emanating out of the subject and filling the surrounding mental space.

There is an uncanny likeness between this description of the thought process and the quantum mechanical view of a shining light bulb. In both case we have the emission of a steady stream of discreet particles (photons or thoughts) emanating from a source (light bulb or human). And in both cases the discreet stream is perceived to be a continuous flow, a

continuous stream of light waves on one hand, a continuous flow of thoughts on the other hand. Thus, this recognition leads us to the first observation of the behavior of nonphysical objects:

Nonphysical psychological processes as described by clairvoyant observers follow the same general patterns as quantum mechanical processes. Or more generally, nonphysical processes appear to be describable by the same mathematical dynamic systems used in the descriptions of physical systems.

There are other considerations that can lead us to the same conclusion, the idea of generating thought-forms is not the only example. The following clairvoyant observations, when seen in the light of quantum theory, also lead us to the same conclusion:

1. Auras can be interpreted as analogous to virtual clouds and thought-forms as analogous to virtual particles (what is meant by the term "virtual" will be discussed shortly).

2. Communication is a process of mental and emotional auric resonance, based on the transmission of thought-forms. Thought-forms serve a role analogous to that played by virtual particles in quantum field theories.

3. Social processes result from the feedback between thought-forms and individual auric resonance. That is, people operating according to social patterns is the polarization of a human's aura by a vast and relatively permanent thought-form. In other words, socialization is not mere learning, or the mere conditioning of the individual's thought by social norms, customs and values, but is a nonphysical process of interaction between an individual's aura and the thought-forms that fill the mental space of that person.

4. Interpersonal communication can be thought of as the forming of "social molecules". Social bonds are formed between individuals by processes analogous to the quantum mechanical requirements for the formation of molecules between atoms: overlap of energy/frequency (auras resonating at the same cognitive and emotional "frequencies"), and feasibility of geometric overlap (auras configured in similar forms will be more likely to bind).

5. As well as the quantum mechanical analogies that can be drawn to Besant and Leadbeater's clairvoyant observations, their observation discussed in the book *Thought-forms* that phase-locked pendulum behavior can lead to representations of patterns that look like actual thought-forms allows us to draw analogy with notions from mathematical theories of phase-coupled dynamic systems (this is an aspect of Chaos theory), these being the theories which account for the type of pendulum behavior described by Besant and Leadbeater.

6. And on the basis of the previous point, we can ask about physiological correlates or traces of astral and mental thought-forms on the physical body. Specifically, we can ask: what are the mechanisms in the physical brain that transduce astral and mental vibrations?

I will now discuss each of these six points. To explain the quantum mechanical concept of "virtual particles", I will start by quoting the following explanation as described in a book on elementary particles. Here, the authors are describing the electrical force of repulsion shared between two protons as the result of the exchange of virtual photons:

"We now return to the claim...that both 'contact' and 'action at a distance' are appropriate descriptions of the familiar electromagnetic and gravitational forces. There has been a successful synthesis of these two approaches, the 'quantum theory of fields.' It requires us to think in terms of special agents for each kind of force, agents that carry the force from one particle to another. The electromagnetic force exerted between two protons can be described as caused by the emission of electromagnetic waves (or we could say particles) by one proton and the absorption by the other, and vice versa. These emitted and absorbed waves include the same kind of electromagnetic waves that in their particle aspects are observable as ordinary light quanta--that is, 'photons'

These photons, which are emitted and absorbed without being observed directly, are indeed unusual. They are what we will call 'virtual' quanta, and they live such a short time that their existence is more conveniently thought of as 'virtual' rather than 'real'...

Thus the (electromagnetic) force between two protons...arises from the virtual photons emitted by one and absorbed by the other. The virtual photons emitted by the first one make contact with the proton that gave rise to them, and then they race across and make contact with the other proton. We thus seem to be dealing with a contact force. However, these (virtual) photons have no observable effect, so if we like we can also consider this as an 'action at a distance' force between the two protons. The electric force between dissimilar charged particles, such as a proton and an electron, is described in just the same way, and the electric force between large-scale objects is just the sum of such interactions.⁸

This concept of virtual particles is used by physicists to account for the way in which particles communicate a given force amongst each other. Thus, in the quote above, we see that the electric force between two electrically charged particles is conveyed by virtual photons. Likewise, the strong nuclear force is communicated between "nuclear charged" particles called hadrons (these being particles subjected to the strong nuclear force) by the exchange of virtual particles called pi mesons (or pions).

The concept of a virtual cloud is related to this concept of virtual particles. When discussing any *real* microscopic particle in quantum physics, this particle is capable of polarizing the quantum vacuum. Such a polarization leads to the transient creation and annihilation of virtual particles in the vicinity of the real particle. That is, any real microscopic particle is constantly surrounded by a literal cloud of transient virtual particles blinking on and off out of the quantum vacuum. Naturally enough, such a cloud of virtual particles is called a virtual cloud.

Virtual particles and virtual clouds are both effects of the Heisenberg Uncertainty Principle. I shall not go into details here and the interested reader is referred to notes 6 and 8 for appropriate references.



Figure 6: the aura as a virtual cloud, thought-forms as virtual particles. From Mavromatis (1987).

With this picture of virtual particles and virtual clouds in mind, let us now turn back to Besant and Leadbeater's concept of thought-forms. Thought-forms are seen to be discreet particles emitted out of the mental and/or astral bodies of a human being. To refine this notion so as to relate it to the ideas of virtual particles, consider the following quotes, the first by Leadbeater, and the second by Besant:

"If the man's thought or feeling is about someone else, the resultant thought-form moves towards that person and discharges itself upon (the other person's) astral and mental bodies. If the man's thought is about himself, or is based upon a personal feeling, as the vast majority of thoughts are, it hovers round and round its creator..." ⁹

"...man peoples his current in space with a world of his own, crowded with the offspring of his fancies, desires, impulses and passions"¹⁰

What Leadbeater and Besant are saying here is that thought-forms will either linger in the mental body or not depending upon their content, and form a definite cloud of thought-forms around a human (on the mental and astral planes, of course). In this sense, the thought-forms surrounding a human on the astral and mental planes are like the virtual cloud that surrounds microscopic particles.

Now, to understand what determines the lifetime of a thought-form, consider the following quote by Annie Besant:

"The life period of these ensouled thought-forms depends first on their initial intensity, on the energy bestowed upon them by their human progenitor; and secondly on the nutrient supplied to them after their generation, by the repetition of the thought either by him or by others. Their life may be continually reinforced by this repetition, and a thought which is brooded over, which forms the subject of repeated meditation, acquires great stability of form on the psychic plane. So again thought-forms of a similar character are attracted to each other, making a form of great energy and intensity, active in the astral world.

Thought-forms are connected with their progenitor by what--for want of a better phrase--we must call a magnetic tie; they react upon him, producing an impression which leads to their reproduction...a very definite habit of thought will be set up..."¹¹

Some thought-forms may linger for a long time, but I would like to point out that the opposite situation is also possible. That is, some thoughts (thought-forms) are very transient in their nature and live only a very short life. Subjectively speaking, we all know how transient a large part of our actual thoughts are; we are distracted by a noise and think "Oh, it's just the kids", or we may think to make a phone call but after the call the thought is gone. So many of our thoughts blink on for a very short time and then are gone. In this sense, *most* of our thoughts are "virtual", they have no lasting staying power. Other thoughts though, like Besant describes, will linger round us for a long time. Such thoughts include our name, where we live, the memories of our past, etc..

Incidentally, we can see that the notion of thought-forms is intimately related to concepts of memory. Psychologists speak of memory in a very ill-defined sense, and have killed many laboratory animals to come up with such ill-defined notions. But according to occultism, memory is the fact that relatively permanent thought-forms will stay within our aura, and other thoughts of a less permanent nature will blink on within our aura and then be gone. That is, what we subjectively perceive as our memory is actually the complement of thought-forms that fill our mental body. Memory, in terms of our subjective experience, is primarily a nonphysical concept to the occultist.

Thus, we now have a relatively decent picture of thought-forms; how they are generated, and what the factors are that contribute to their lifetime. We would now like to relate this to the ideas of virtual particles. If, in the above quote describing the virtual particles, we replace the words "proton" with "people", replace the word "electromagnetic" with the word "social", and replace the word "virtual quanta" with the word "thought-form", then we will have a description that is almost identical to that given by the clairvoyant observation of Besant and Leadbeater regarding human interaction. As a matter of fact, let's do this:

"Thus, the social force between two people...arises from the thought-forms emitted by the one and absorbed by the other. The thought-forms emitted by the first one make contact with the person that gave rise to them, and then they race across and make contact with the other person... The social forces between large scale objects is just the sum of these forces."

It is indeed uncanny that clairvoyant observations of nonphysical processes should resemble so closely the descriptions physicists use. Again, if we look to Figure 6, we can think of the aura surrounding the individual as a "virtual cloud" of nonphysical matter, and the thought-forms as nonphysical "virtual particles". Thus, in our scientific interpretation of occult concepts, we specifically begin by associating thought-forms with virtual particles and auras with virtual clouds.

Let us continue with this analogical line of thinking and consider the other points listed above. Now the key to understanding points two, three and four above revolve around the same issues. These three points can be restated in one point as follows: *Human communication, interpersonal interaction, and large-scale social behavior are all rooted in the same processes.* These processes are described by interpreting clairvoyant observations of the behavior of auras and thought-forms in terms of quantum mechanical field ideas.

First we must realize that communication *is* interpersonal relationship. Secondly we must realize that social systems are the sum of all of the relatively permanent interpersonal relationships among the individuals in the society. As well, a social system implies, in occult terms, the existence of large, relatively permanent and very powerful thought-forms that will polarize individuals towards them (religions and governments are examples of this type of social-wide thought-form, so too are the rules of driving on interstate highways, and every other transmittable form of social behavior).

Now, communication or interpersonal relationship results, according to occult observation, from the exchange of thought-forms. Some of these exchanges are transient, as when we say hello to someone we pass on the street. Others are more permanent, as with our family or friends, for example. These transient relationships are the result of the exchange of "virtual" thought-forms, and our more permanent relationships are the result of the exchange of more permanent thought-forms. In terms of quantum mechanical field theories, these thought-forms serve as the agents that carry "communication force" between individuals, and serve to bind individuals into what we might call "social molecules". And it is the sum of the more permanent "social molecules" and the large-scale thought-forms which bind them together that makes up a large scale social system.

What I am saying is that each and everyone of us is like an atom, and that through the thought-forms we emit from ourselves, we create social bonds with other people. Some of these bonds are transient and other are more permanent. Through the more permanent social bonds we share with other people, we then belong to definite social molecules. And all the separate groups of social molecules are bound into one great unit by the cultural norms and values (i.e. large-scale thought forms) of any particular society. And the totality of these bound social molecules is the society and civilization in which we live.

This is a very clear example of the utility of quantum mechanics for describing psychological and parapsychological processes. However, we cannot get too carried away. As with the discussion given above about Leadbeater's use of the word "density", we must realize that when we turn to quantum mechanics in this fashion there are many technical subtleties we are ignoring and that our analogy only has a limited validity. We are utilizing quantum mechanical concepts as a metaphor, a picture to help us clarify and interpret the claims of clairvoyant people.

In spite of this limitation, the suggestiveness of this analogy is overwhelming. This means that by interpreting clairvoyant observations by analogy with quantum theory, we can develop a very general and encompassing model of human psychological and social behavior. This model will be defined in chapter 14. Thus, we began by discussing how parapsychologists have mistakenly turned to quantum theory and we have ended up with the foundations for a general theory of human behavior derived from a quantum mechanical interpretation of clairvoyant observations.

This whole issue is very difficult to communicate because so few people understand either quantum theory or occultism as I am presenting them here. Furthermore, what really complicates the issue is the factor I discussed above about how difficult it is to untangle ideas from emotions in our society. For we all think, we all feel, and we are all a part of society. Yet our concepts of these experiences are so entangled with emotional biases and prejudices that it is difficult to see these processes for what they are. If this wasn't the case, it wouldn't be necessary to explain these concepts in terms of quantum theory and occultism. However, the advantage to both of these systems of thought is that both are relatively free of the emotional tangles that blind us from understanding ourselves. This is the case with quantum mechanics because it does *not* deal with people, but rather is the impartial and disinterested study of physical matter. And occultism is clear of these tangles because it (theoretically) has the intellectual power to see through these tangles to begin with, even though it does deal with people and their behavior.

Let me summarize what I have done up to this point. I have now presented the foundation for a general *mechanistic* model of human psychological and sociological behavior by interpreting clairvoyant observations in terms of quantum field theories. The important feature of this model is that it can explain human communication and social interaction as a definite and literal type of bonding (resonance) that results from the exchange of thought-forms, these serving a role analogous to that of virtual particles in quantum field theories. This model is mechanistic in the sense that it defines a definite and precise mechanism by which processes of human interaction and communication occur. In conjunction with the model of the ego that was

presented in the discussion "What Is Ego?", we now have a clear means by which to understand the underlying *mechanisms* of human subjectivity.

Again, the issue with these models in comparison to other models in psychology and sociology is not one of right or wrong. The issue is to have a clear and encompassing view of psychological and sociological processes that accounts for the tremendous variety of human experience. The model I am presenting here provides a general mechanistic framework for understanding any and all levels of human subjective behavior, from the individual personality to the growth and decay of entire civilizations. Besant and Leadbeater clearly recognized the power of thinking of subjective processes in these terms. However, they had no idea that eventually physicists would come to see analogous processes operating in physical matter. The reasons for reinterpreting Besant and Leadbeater's concepts in quantum mechanical terms are:

1. It shows that similar processes operate at different scales of Nature, or "as above, so below".
2. It illustrates again how occult concepts have foreshadowed developments in modern science.
3. It legitimizes occult ideas by putting them into accepted terms.

Furthermore, this quantum mechanical interpretation of Besant and Leadbeater's occult psychology provides a framework showing that 1. our subjective experience is not different in any fundamental sense from objective objects (because physical and nonphysical matter form a graduated spectrum), and 2. all forms of human subjectivity, from our normal perceptions through to the seemingly most unusual claims of clairvoyants and mystics are grounded in identical processes, and these processes are highly analogous to resonant quantum field processes. Thus, this model has direct implications for understanding the relation between the physical and nonphysical planes. All of this will be elaborated upon and summarized in the chapter "A New Concept Of Motion".

Before I conclude this discussion, I would like to address points five and six from above. These points are supplementary to the quantum mechanical interpretation of clairvoyant observations and fascinating in their ramifications. Leadbeater in *Thought-forms* describes physical examples of vibrations giving rise to form and how such forms resemble thought-forms. Once I again, I quote the source:

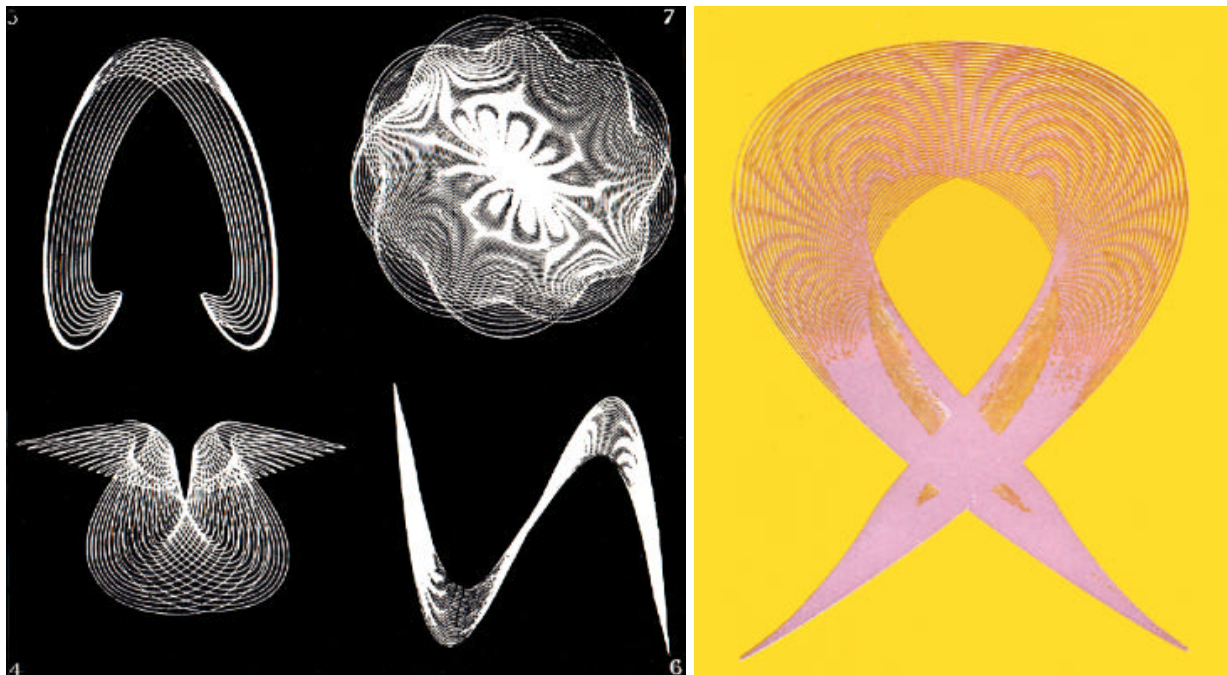
"The fact of the creation by vibrations of a distinct form, geometrical or other, is familiar to every student of acoustics.

A sound plate is made of brass or plate glass. Grains of fine sand are scattered over the surface, and the edge of the plate is bowed (with a violin bow). The sand is thrown up into the air by the vibration of the plate, and on re-falling to the plate is arranged in rectangular lines...The shapes are due to the interplay of the vibrations that created them. (A second way to create forms from vibration is that)...two or more simultaneous motions can be imparted to a pendulum, and by attaching a fine drawing pen to a lever connected with the pendulum its actions may be exactly traced. Substitute for the swing of the pendulum the vibrations set up in the mental or astral body, and we have clearly before us the *modus operandi* of the building of forms by vibrations.

It seems to us a most marvelous thing that some of the drawings, made apparently at random by the use of (these techniques) should correspond to higher types of thought-forms created in meditation. We are sure that a wealth of significance lies behind this fact, though it will need much further investigation before we can say certainly all that it means"¹² (parenthesis mine)

What Leadbeater has done here is claim that thought-forms are phase-coupled dynamic systems, or at least the product of some type of phase-coupling. Phase-coupling is a process in which two vibrating objects are set in contact in such a way that each's vibration affects the other. Setting two grandfather clocks back to back is an example of phase-coupling, or imparting "two or more simultaneous motions" to a pendulum, as described by Leadbeater in the above quote, is another example. There are many, many example of phase-coupling in modern physics and it is a very important phenomena that has gotten much attention. It is also known that, under certain conditions, phase-coupled systems will give rise to fractal curves¹³.

The device Leadbeater describes above is an example of a phase-coupled (also called "phase-locked") dynamical system. Figures 7 and 8 are reproductions from the book *Thought-forms* showing the drawing produced by this phase-coupled pendulum system. Clearly these are very intricate patterns highly reminiscent of magnetic field lines. It is quite marvelous that Leadbeater claims this is what actual thought-forms look like. These pictures bear an uncanny resemblance to the periodic and chaotic attractors of chaos theory. I have provided an illustration of a chaotic fractal graph in Figure 9. Note the obvious similarity in appearance of the chaotic graph to the thought-form representations.



Figures 7&8: These are images of thought-forms from Besant & Leadbeater (1901) which strongly resemble the behavior and graphs derived from phase-locked dynamical systems.

There is an unspoken rule in physics that if one system can mimic the behavior of a second system, and the mechanisms of the first system are known, then these mechanisms apply as well to the second system. This is why physicists can, for example, mimic mechanical events with electrical circuits: both processes are described by the same mathematics. It is the same situation here; if thought-forms can be described by phase-coupled dynamic systems, then the mathematics of phase-coupling is also applicable to thought-forms.

The significance of the tie-in between thought-forms and phase-coupling is that, first, it again illustrates that nonphysical (occult) phenomena is potentially tractable by the same type of mathematical analysis applied to physical phenomena. Secondly, it is highly suggestive of actual mechanisms. What is really suggested here is that *processes of thought are intimately associated with phase-coupling*, perhaps at many levels. In a sense, what Leadbeater is saying indirectly is that thoughts are a result of phase-coupling between the organism and the environment. Such phase-coupling between the actual form of living organisms (their bodies, whether physical or nonphysical) and the environment in which they dwell may be the whole basis for nervous system activity. That is, thoughts, sensations, and sensory experiences of all kinds, are the product of some type of coupling between the perceiving organization (body or vehicle) and what is being perceived (the environment or field).

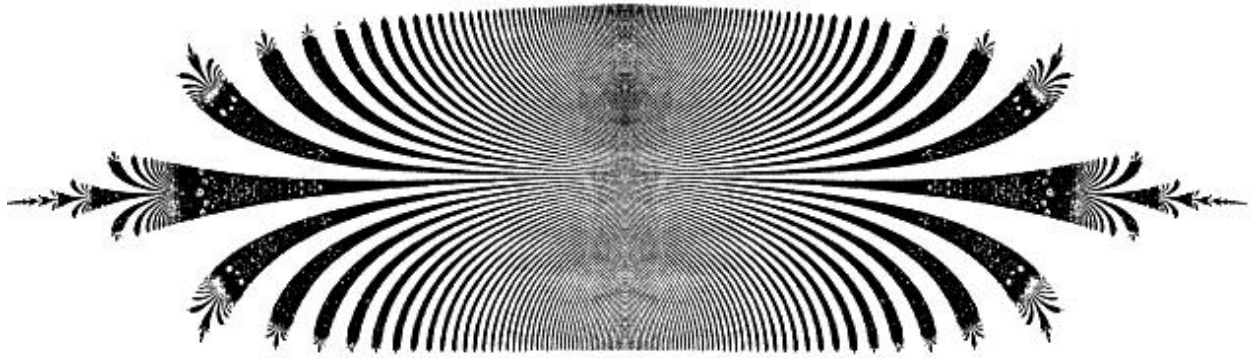


Figure 9: A chaotic Julia set that resembles a phase-locked portray of thought-forms, and also suggests how thoughts could be fractal in nature.

Another word for such phase-coupling is "resonance". In the chapter "Occult Means Of Perception" I made the sweeping generalization that all mental phenomena are the result of some type of resonant phenomena. The phase-coupling view of thought-forms I am discussing here is the very basis of this resonance. And I will add to this generalization that not only mental phenomena, but all of our subjective phenomena--emotions, mind, dreams, psychic abilities, intuition, and spiritual insight--is intimately grounded in such resonance processes. Such a generalization provides an overwhelmingly unifying basis by which to approach the scientific study of subjective events and phenomena, one that is intimately related to the "hard" sciences. As we will see in the chapter "A New Concept Of Motion", we can extend this generalization to all levels of the phenomena of Nature. That is to say, all of Nature can be seen as a vast conglom-

eration of resonant processes. Thus, we scientifically come to the Taoist insight that all Nature is a great "Ilya"--the song and dance of Shiva.

Also, the pictures of the thought-forms in figures 7 and 8 may represent the actual traces that are present in nervous tissue, traces that are caused by phase-coupling processes. Could such pictures represent the actual patterns of electrical energy in the brain that accompany our thoughts? A recent article in *Scientific American*¹⁴, demonstrating the presence of mathematical chaos in the electrical activity of the brain would tend to support this line of thought. Such patterns are most likely highly dynamic, forming and fading rapidly, thus *not* forming the ever elusive "engram", or "memory trace" searched for by physiologists (we will have more to say about this in chapters 13 and 14).

Again, I could go off into many technical subtleties at this point only to leave the reader lost in technical jargon. But that is not my intent here. I am presenting these ideas as an introduction to new lines of thought about psychological, sociological, and parapsychological processes, and to show that these processes are intimately similar to physical processes. This is hardly the final discussion on these subjects. It is, I hope, only the beginning. I will pursue these issues when I summarize the discussions of science and occultism in the chapter "A New Concept Of Motion".

There is one last suggestion I would like to make before I close this chapter regarding the quantum mechanical interpretation of clairvoyant observations. Consider this possibility: If we assume that the main conclusions of this discussion are correct, that is, that processes described by clairvoyant observers are analogous to processes described in quantum theory, then what does this mean for our understanding of physical matter? That is, since we *are* humans, and we can watch subtle quantum mechanical-like processes operate in our own subjective behavior, may this not suggest subtle interactions in physical matter that would escape the notice of the relatively crude means we have for detecting microscopic physical processes? We begin by using quantum theory to describe ourselves, but through understanding ourselves better, may we not come to appreciate physical matter better as well? After all, the main thing quantum mechanics and occultism share is the concept that "it's all vibrations", quantum theory being a mathematical and physical response to this realization, and occultism being a qualitative and nonphysical response. I am sure there is a mutualism here that I can barely even fathom.

11.1 Epilogue: Quantum Mechanics As Applies To Macroscopic Experience

"In the rush to marry physics and mysticism, using the shotgun of generalization, we tend to forget that quantum reality has almost no bearing whatsoever in the actual world of macroscopic processes. As physicist Walker puts it, in the ordinary world of "automobiles and basketballs", the quanta are inconsequential."¹⁵

Here I would like to criticize the supposition of many scientists and philosophers that the Newtonian paradigm is a more accurate representation of macroscopic experience than the quantum mechanical paradigm, and that the quantum mechanical paradigm has no parallel in

terms of macroscopic experience. This view is a myth whose continued perpetuation is grounded primarily in a lack of understanding the meaning of the concepts of quantum theory and how they may be applied to our macroscopic experience.

As I have argued above, the processes of human psychology, interpersonal communication, and large-scale social interaction, when interpreted in the occult terms of auras and thought-forms, are macroscopic examples of processes common to quantum mechanics (i.e. virtual clouds, bond formation via virtual particle interactions, discreet energy transitions, resonance, etc.). The Newtonian approach to our macroscopic experience is limiting and misleading primarily because it *cannot* provide an analogy for processes of human behavior and interaction. And these processes of human communication and social interaction are much more fundamental in our macroscopic experience than processes of balls moving on continuous parabolic trajectories.

Because present philosophers and scientists focus on the wrong levels of quantum theory and its implications (for example non-causality), they do not see how quantum processes apply at the macroscopic level. The above quote by Ken Wilber implies that quantum processes are irrelevant because they are so minute. This is indeed true in the macroscopic behavior of physical objects, such as basketballs and automobiles; electrons, quarks and photons are really not that important in this context. But in terms of human psychology, such lines of thought as Wilber's are not pertinent. It is not the microscopic quanta that we are interested in at the macroscopic level. The essential question is: Are there macroscopic examples of *processes* found in the behavior of microscopic quanta such as photons or electrons?

The answer to this question is "yes". Again, the essential feature of quantum processes that needs to be focused on is *resonance*. What is relevant is the fact that quantum mechanics describes mechanisms of cause and effect in terms of wave behavior and resonance. These are the factors that we also see operating in our psychological and sociological behavior. Quantum theory explains how physical matter interacts in terms of resonance, and these mechanisms apply as well to our macroscopic subjective experience, as I have argued in this chapter.

Once one begins to understand the train of thought outlined above which sees psychological and social processes as quantized resonant phenomena, it becomes progressively more obvious that quantum processes operate right here right now in all of our subjective sensations of thinking and feeling, as well as on other levels of macroscopic experiences. The process of insight is a discreet quantum transition. Science itself exists only because of the quantum type of interactions that exist in human systems. Not only do thoughts quantize as thought-forms, but life itself is quantized into species, and species are quantized as organisms.

Quantum mechanical ideas apply to our macroscopic experience, and I think it is high time that this myth that the Newtonian universe is the only adequate description of our macroscopic experience be put to rest. And the associated myth, that quantum processes have no parallel in our macroscopic experience, is just as false, as this chapter explains. Thus, this notion should be left to rest in peace as well.

Notes: Chapter 11

¹Wilber, (1982).

²I say this because, in a sense, what we consider space to be is in actuality what consciousness is. Consciousness is the ultimate receptacle of events, and as such it is the receptacle of both physical and nonphysical events. Therefore our consciousness is neither physical or nonphysical, but is the supreme expression at the level of human existence of the ultimate and undefinable essence of (as Seth would call "IT":) All That Is.

³Leadbeater, (1986), page 6. Here the careful reader will note that Leadbeater is describing a spectrum containing sound waves at the slow end and light waves at the fast end. That is, Leadbeater saw sound and light as forming a continuum. This is not the way that sound and light are conceptualized in modern physics. Sound is defined as vibrations propagating through air, but light is conceptualized as electromagnetic radiation that propagates through the medium of Einstein's space-time. However, it is not that Leadbeater is naive in making this continuum between sound and light. This is a very natural corollary of the Theosophical arrangement of the planes. What physicists think of as space-time (that is, the medium through which light propagates), occultists conceive of as etheric matter. And etheric matter is but the four "higher", or finer, states of matter in the physical plane. Thus, in Leadbeater's scheme, sound and light are both vibrational types found in the matter of the physical plane, and as such he saw them forming a continuum. Again, we see occult ideas not only embracing scientific ideas, but doing so within a more inclusive framework.

⁴This density is about 10^5 tons/mm³. The constant density of nuclear matter is due to the fact that the strong nuclear force is *saturated*. This means that the binding energy per nucleon is a constant. Or in other words, the volume taken up by nuclear matter is always proportional to the mass, thus density is always constant.

⁵"And we all shine on, like the moon and the stars and the sun", as John Lennon said. Lennon probably knew the literal truth of his statement.

⁶Arya, (1974), page 53.

⁷Besant and Leadbeater, (1986), page 8.

⁸Frisch and Thorndike, (1964) pages 95-97.

⁹Besant and Leadbeater, (1986), page 16.

¹⁰Besant, (1918), page 16.

¹¹Ibid., page 16-17.

¹²Ibid., page 18-20.

¹³For a somewhat technical discussion of the importance of phase-locking processes in modern physics see Bak, (1986).

¹⁴Freeman, (1991).

¹⁵Wilber, 1982, page 166.

Chapter 12. A Synthesis of Science and Occultism in Light of Modern Neurosciences

How do all of the ideas we are discussing in this work fit in with developments in modern neurosciences? First off, I use the word "neuroscience" to denote the battery and arsenal of multi-disciplinary techniques and approaches that have evolved in the behavioral sciences primarily throughout this century. So instead of using traditional terms such as "psychology" or "ethology", I will use the term "neuroscience" to apply to the newer behavioral sciences in which state-of-the-art techniques in biochemistry, molecular biology and genetics are being utilized to elucidate the molecular basis of behavior. The actual strength of these newer disciplines in the behavioral sciences rests in the sure chemical knowledge of the properties and behavior of biological molecules such as DNA and the myriad proteins. Traditionally, the behavioral sciences have been thought of as "soft" sciences, but the neurosciences which I am about to discuss actually are on the border between the "hard" and "soft" sciences, sharing many qualities of both. As such the "hard/soft" science distinction becomes relatively meaningless when applied to these disciplines.

Many great accomplishments have been achieved throughout this century in these fields, not the least of these being the determination of major features in the molecular fine structure of the brain¹. Another important feature of these new behavioral sciences is their increasing overlap with computer sciences and computer theory². In many respects, these developments in the neurosciences are probably the most profound and dramatic scientific developments to have occurred within the past twenty-five years because many problems that once seemed intractable to science, such as the mechanisms of perception or emotion, seem to be giving way to these new approaches. It is even hard to generalize today about these fields because they are so dynamic, with new and important developments occurring daily.

And the question to be raised here is just how do occult notions fit in with these developments?

Again, it is a question of terms: in what terms do we want to analyze occult claims?. Yet a broader issue looms here. We must understand the social context of these developments in neuroscience and to what uses they will be applied as they become increasingly more sophisticated. The developments in physics and engineering are, quite bluntly, very crude and primitive in comparison to the subtleties of biological dynamics. The point is, if we can use the explosive development of physical technology in this century (i.e. lasers, semi-conductors, computers, magnetic resonance imaging, etc.) as a guide to the potential developments that will stem from today's biotechnology, and specifically its application to behavioral phenomena, then it could appear that we are only a few short steps away from a *Brave New World* or a *Clockwork Orange*.

Luckily, there are presently indications the such may never be the case. That is, developments in the theoretical understanding of complex organizations such as brains and societies do not follow a mathematical order that is as easy to control and manipulate as the machines that have been created from linear, Newtonian theories (see the discussion on nonlinear physics and chaos theory in chapter 3). Still, it is naive to underestimate the human species' ability to use a good thing for foolish ends, and current knowledge is in such a great

state of flux that predictions at our present stage are tenuous at best. Whatever the actual case turns out to be in this regard, it is obvious that the language and paradigms of modern neuroscience will only become more prevalent as time goes on.

But what does this fact have to do with the issue of a synthesis of science and the occult? Well, the simple fact is that unless occult phenomena can be, at least to some degree, understood in the terms of the neurosciences, then we can bet it will never be taken seriously by the community of folks who potentially have the most to gain intellectually from a synthesis of science and the occult, that is neuro- and behavioral scientists. The occult deals primarily with the rational understanding of the mind and the emotions in terms of nonphysical reality. The neurosciences deal primarily with a rational understanding of the mind and emotions in terms of physical, and increasingly more often, biochemical phenomena. At the very least the occult paradigms point to a link between physics and psychology. Unfortunately, the models and languages of the neurosciences are more abstract, cryptic, obscure and intimidating to the uninitiated than any occult system. Yet, as the social perceptions of the validity of these neuroscientific languages for describing emotional and mental phenomena grow, as is inevitable unless contemporary civilization collapses, any competing concepts laying a claim to the phenomena described by these languages will go by the wayside and be forgotten, dismissed as nonsense, and utterly disenfranchised from anything considered to be "science". Indeed, this very book is an attempt to ameliorate such a situation.

Taking such concerns into consideration, the most pertinent question is: Can phenomena described by occultists even be understood in terms of physiology, biochemistry, genetics and computer sciences (these being the languages of the neurosciences)? The next question is: If this can be done, then what good is it? And finally, given the generally hostile attitude that scientists have towards the occult, the bottom line is: Is it worth the effort?

Regarding this latter question, we in favor of a synthetic approach between science and occultism can always console ourselves with the fact that, though civilizations come and go, somehow or another, science keeps marching on. So even if, in the unlikely event that our society collapses and our sciences never discover the validity of what I'm calling occult views, we can rest assured that eventually the pendulum of history will swing the other way and some future civilization will possess sciences that we today would call "occultism". However, useful as such notions are for calming the nerves of people like myself who worry about such things, they really aren't productive on the kind of concrete and operational level that our particular civilization values so highly. So, let's return to the above questions keeping in mind that we want to be "concrete".

Can occult phenomena be understood in terms of modern biology? Mystically and occult inclined physiologists and parapsychologists have attempted to measure vital statistics of yogis or meditating individuals when in a meditative trance³. We have already reviewed the work of Motoyama, who is involved in such endeavors. As a matter of fact, a surprisingly decent array of work along these lines exists in the scientific literature, ranging from studies which look at the physiological effects of meditation to physiologic models of kundalini⁴.

Yet these types of studies have gone nowhere in terms of leaving an impact on the scientific world, or of opening science as a whole up to occult and yogic ideas, or of affecting

the popular image of science. One is lucky to find mention of yogic meditative states in psychology texts⁵.

I think the main reason that these types of empirical approaches to analyzing occult phenomena have not made a substantial impact on the scientific world is because of other tremendous advances in the biological sciences which have occurred during the later half of the 20th century. Quite simply put, other developments have just overshadowed studies of occult and yogic phenomena. Discovering the structure of DNA, or showing that there is a distinct genetic pathway that corresponds to instinctive behavior in mollusks is just inherently more interesting to most contemporary biologists than are the EEG and EKG patterns of a meditating person.

Really, the issue gets down to what a given community of scientists consider to be interesting at any given time. And this has to do with what scientists can relate to; anything having to do with altered states of consciousness tends to intimidate most scientists because they do not understand very much about such issues. Thus, the scientific world generally shies away from scientific attempts to understand occult phenomena. There are also other factors, political factors, that have to do with research funding and other considerations, but such a discussion would take us too far afield. Also, as mentioned at the start of Chapter 6, the idea of scientists attempting to research occult teachings implies for the science itself to go beyond current mainstream ideas of what constitutes a valid topic of scientific inquiry, and again, this is just not a comfortable affair for most scientists, or for those who control the purse strings of science.

However, leaving aside these social considerations, the idea we want to explore here is finding a way to empirically display occult phenomena in terms of the topics, or more importantly, in terms of the definitions and concepts that are meaningful, relevant and therefore of interest to contemporary biologists, and particularly, contemporary neuroscientists. Taking this approach, some pertinent questions might be: Is there some type of physiochemical process that accompanies the opening of the "third eye" or the raising of one's kundalini? Using the occult approach to the phenomena of dreaming, can we offer perhaps some clues as to the physiological, neuronal or biochemical processes that occur during dreaming? Even in questions related to developmental biology, scientists, exemplified by such as Rupert Sheldrake, are turning to ideas like "morphogenic fields", ideas that are very similar to occult notions of auras⁶. Or, considering that psychopharmacology, the study of drugs which affect psychological --as opposed to physiological--behavior, is such an important field today, is there perhaps some kind of drug or chemical substance that can induce occult means of perception--clairvoyance, telepathy, etc.?

This last question, for reasons that will be clear shortly, deserves some serious consideration. Let us be hypothetical for the moment and say that I have a drug that creates an effect in the user that is almost identical to occult descriptions of the opening of the third eye chakra. What would potentially be the characteristics of such a drug? In terms of the subjective effect of "opening the third eye" and inducing clairvoyance, there are potentially many different effects our hypothetical drug could have because there are, according to occult claims, potentially many levels one can focus onto (i.e., perceive) when their third eye opens. One could have a very limited experience and perhaps see a bluish grey haze or light surrounding things and people, which would then correspond to clairvoyant reports of the etheric plane. Or

perhaps the effect is stronger, and now one is seeing swirling colors flickering on and off in an Escher-like environment. Maybe ghastly little creatures and strange faces well up before one's eyes. In this case, the description sounds very familiar, more so than to be just coincidence, to clairvoyant descriptions of the astral plane, a plane further removed from the physical than the etheric and thus, corresponding to a greater or stronger opening of one's third eye. Or consider a third possibility, now instead of seeing purple hazes or dancing colors, perhaps what one "sees" are ideas, very clear ideas, not simply in the sense of cognizing, as we do commonly in our everyday lives, but a type of "super-cognizance" where ideas appear to us almost as objects within our vision, so clear, so material, it would seem we could almost touch them, describing their shape and texture and so forth. If this was the effect of our hypothetical drug, then it would be fair to say that we have a drug that has opened our third eye to such a great extent that we are actually perceiving a reality clairvoyantly described by occultists as the mental plane.

At this point, maybe the reader feels that I have taken my speculations too far. Otherwise, the reader knows exactly the point I am about to make. That is, our hypothetical drug described above is, in actuality, not hypothetical at all. It is a very real drug, or more specifically, a class of drugs in which the above psychotropic (i.e. mind-altering) effects have been very well documented time and time again. I'm talking about the hallucinogenic drugs, of course: LSD, mescaline, peyote, psilocybin and other related compounds. A second drug from a different class of compounds, Ketamine, also appears to produce effects that are indistinguishable from occult descriptions of clairvoyant experiences.

It is not unknown in the occult that certain drugs will create temporary psychic abilities. Aleister Crowley discusses the occult use of mind-altering drugs⁷, and so does C.W. Leadbeater⁸. Leadbeater warns absolutely against the use of these drugs, associating their use with low and base forms of black magic. He explains that using these drugs to awaken one's latent psychic abilities is dangerous in that one could open oneself up to harmful influences with which one is not prepared to cope (see the short discussion in note 8 for Leadbeater's rationale here). Crowley is less rigid in his discussion of such drugs. Crowley cautions the reader to be responsible and prudent when using these drugs, and to use them only for purposes of gaining occult knowledge. Crowley's view is that these drugs can serve to open the aspirant up to occult realities, but they are no substitute for real yoga practice. In either case, both authors agree that certain drugs can temporarily induce psychic abilities.

The association between occult/mystical perceptions and the hallucinogenic drugs is also recognized outside of occult circles. The popular books by Carlos Castaneda, describing his adventures with the Hopi Indian Don Juan, make very clear the occult properties of hallucinogenic substances.

There is also a relatively large body of scientific literature available today, most of it produced in the nineteen fifties and sixties, before hallucinogenic drugs were made illegal, and before the psychedelic movement caused these drugs to become a taboo topic in science, that makes the association between mystical insight (or "cosmic consciousness") and hallucinogenic drugs. Often this literature speaks in terms of drug induced "religious experiences"⁹. Yet, in all of the literature of this era that I have surveyed, I have never seen the connection made between occult means of perception and the hallucinogenic experience. That is, the connection between clairvoyant perceptions, hallucinogenic drug induced perceptions, and modern science--notably

fractal geometry and neuroscience--has not yet been explicated in clear terms from the scientific point of view. And that now is what I shall do.

In this context, I would first like to consider the drug Ketamine. Ketamine has been used by anesthesiologists in routine clinical procedures such as tonsillectomies on children, and on women during childbirth since 1970. It is known medically as a "dissociative anesthetic" because of the psychological effect it has on patients. These effects include: "lively dream activity, sensory distortions, and hallucinations". Recent research conducted by Hansen and associates in Denmark⁹ has shown that Ketamine produces the following psychotropic ("psychotropic" means "mind-altering") effects when administered in sub-anesthetic doses (these are paraphrased from the paper referenced in note 10):

1. A sensation of light throughout the body.
2. Changes in the sense of one's body consistency (that is feeling that one is made of wood or plastic, etc.)
3. The perception of body parts as being extremely large or extremely small.
4. A sensation of floating and weightlessness.
5. Visual perceptions of radiantly colored "moving, glowing geometrical patterns and figures".
6. A sense of timelessness.
7. Very strong emotional experiences.
8. Out-of-body experiences.

As well as this detailed research report, other authors have reported the psychotropic effects of Ketamine, most notably John Lilly¹¹. From the above list, we can see that there are two immediately relevant occult phenomena induced by Ketamine: out-of-body experiences and the induction of the siddhi known as anima or micro-psi (number 3 in the above list). Also, it seems reasonable to conclude that effect number 5 above, the seeing of highly colored dynamic patterns, is a Ketamine induced perception of the astral plane, as this effect sounds extremely similar to occult descriptions of the astral plane (see quotes by Leadbeater on page 225). Thus, that this drug induces occult perceptual abilities points to a clear relationship between the neurochemistry of the brain and occult means of perception.

Let us now turn to reviewing the psychotropic effects of the hallucinogenic family of drugs, using the effects of LSD (lysergic acid diethylamide) as our example. Anybody who has ever "hallucinated" under the influence of this drug is overwhelmed by the quality--the shape, colors and textures--of these visual perceptions. Alan Watts describes the experience vividly:

"Closed-eyed fantasies in this world (of one's hallucinations) seem sometimes to be revelations of the secret workings of the brain, of the associative and patterning processes, the ordering systems which carry out all our sensing and thinking. ...they are for the most part ever more complex variations on a theme - ferns sprouting ferns sprouting ferns in multidimensional spaces, vast kaleidoscopic domes of stained glass or mosaic, or patterns like the models of highly intricate molecules, systems of colored balls, each one of

which turns out to be a multitude of smaller balls, forever and ever- Is this perhaps, an inner view of the organizing process which, when our eyes are open, make sense of the world even at points where it appears to be supremely messy¹²?" (parenthesis mine)

Watts statement here is pregnant with implications of the relationship between hallucinogenic induced perceptions, science and occultism. Not only does he make the connection to neurological processes, but his description of the visual images is obviously that of a fractal, and the overwhelming similarity of his description to clairvoyant perceptions is no coincidence. So here is the main point, and I want this to be perfectly clear: *hallucinogenic drug effects, fractal forms, neurological processes and (certain) occult descriptions of clairvoyant imagery are all intimately interrelated.*

Again, occultists recognize this fact in their own terms, but scientists, and especially psychologists, physiologists, parapsychologists, do not. That these connections are true points to scientific means for understanding the nature of occult perceptions that has not been utilized by scientists to any useful extent. That is, *psychotropic drugs bring occult claims within the scrutiny of scientific means.* It is my hope that the following discussion will shed light on the connection between psychotropic drugs, science and occultism, because I feel that this is a highly meaningful way to display the validity of occult realities, and to study the nature of occult realities with the means presently at the disposal of science. And this method is intimately related to the neurosciences and their conceptions and definitions of the relationship between mind and body. In other words, hallucinogenic (or more generally, psychotropic) drugs provide a highly substantial empirical bridge between occultism and science via the neurosciences.

To define the interrelation between science, occultism and psychotropic drugs, let us begin by focusing on the similarities between fractal geometry and occult (clairvoyant) perceptions. The common theme here is that of "things within things within things". In the occult this is the basis for the famous Hermetic Axiom: "As Above So Below". This notion implies that the same principles or laws or organizing patterns operate at different levels of resolution, focus, or scale, an insight that has come about supposedly through direct clairvoyant apprehension. To the fractal geometrist, this exact same idea is given the title "self-similarity", again meaning that the same pattern can be found at different scales or levels of resolution. Is it a merely a coincidence that one of the most ancient and revered of occult ideas is identical to one of the major new ideas in modern science?

To further reinforce this connection, I have provided illustrations of both fractal images and images of Tantric art. Tantric Buddhism is one of the more occult forms of Buddhism in that yoga and occult practices are fundamental to Tantric doctrines. We have seen this already in the work of Motoyama, but other authors emphasize this as well¹³. Thus, it is highly reasonable to interpret the imagery of Tantric art forms as being representative of at least certain features of what occultists perceive in altered states of consciousness.

Plates 7, 8, 9, and 10 show examples of Tantric art. These are a mandala tapestry, a Tantric Buddhist temple, details of a Tantric Buddhist temple, and a jeweled bronze statue, respectively. For the moment let us ignore the mandala in Plate 7, for it represents a quality of occult perceptions we shall discuss shortly (this being, as Alan Watts says, "multidimensional

spaces"). Looking at plates 8, 9, and 10, what we want to focus on is the self-similarity inherent in these images. That is, in Plate 8, the photograph of the Tantric temple, note how each higher floor appears to be a self-similar replica of the lower floor. In Plate 9, we see self-similarity portrayed in the fine details of the temple. Here we see the beams and their decorations, the statue carvings, and the windows repeated in such a way as to create a fractal-like effect of self-similarity. In the photograph of the statue in Plate 10, note the self-similar repetition of the figure's head (see caption to Plate 10 for the story behind the figure portrayed by this statue). If indeed these art forms represent what Tantric occultists perceive in altered states of consciousness, then it is apparent that such perceptions have a large fractal component to them. Or in other words, the nonphysical worlds perceived by occultists have very definite fractal qualities.

Also, a second line of reasoning to support my contention is the teaching put forth by occultists that one must not attempt to directly focus on the things you perceive in the nonphysical planes, but instead must glance over them, otherwise they will transform before your eyes¹⁴ This same effect is also observed in the generation of fractal images: the more one focuses on a given region of a fractal, the more new structures emerge, thus transforming the original image. To me the implication is clear; *occult descriptions of clairvoyant perceptions describe self-similar, or more generally, fractal objects.*

Now we will tie this connection in with the issue of hallucinogenic induced perceptions. Consider Alan Watts' quote from above: "...ferns sprouting ferns sprouting ferns", or "systems of colored balls, each one of which turns out to be a multitude of smaller balls, forever and ever". Watts is obviously describing fractal structures and he wrote this around 1962, at a time when the concept of fractals was little more than an esoteric and mathematical curiosity. The term "fractal" did not even exist at the time Watts wrote this, and only a few special fractals such as Cantor Dusts were known at that time.¹⁵ Yet Watts' statements are unambiguously clear: he is giving a qualitative description of fractal shapes. It is highly unlikely that Watts knew about such mathematical ideas, but it is quite clear that he perceived fractal images while under the influence of hallucinogenic drugs. This is an extremely important point. The fact that both occultists and hallucinogenic drug users perceive and describe fractal forms provides a basis to show the similarity of these two experiences. It is likely that these are not even two different types of experience, but are identical. I am also very clear about the clairvoyant properties of the hallucinogenic experience in the next chapter.

Again, I have provided illustrations to emphasize this point. In Plate 4 are two pictures taken from an introductory psychology book meant to illustrate what the author calls "universal hallucinatory images"¹⁶. These images are universal in that they are common to the "hallucinations" of many different psychological conditions including: hallucinogenic drug induced states, epilepsy, psychosis, sensory deprivation and electrical stimulation of the brain. The key similarity amongst the imagery of these states is that of the "lattice tunnel" as depicted in these illustrations. This "lattice tunnel" is a dynamic swirling motion accompanied by a spiral tunnel-like sense of depth.

If we look now at plates 5 and 6, what we have represented in these plates are two examples of fractal images. Plate 5 is an approximately 100-fold magnification of the boundary of the Mandelbrot Set, and Plate 6 is a fractal known as a Julia set. The mathematical

technicalities of these images need not concern us at this point. What is important to observe is that, as we see in plates 5 and 6, this swirling, spiral tunnel-like sense of depth is also common to fractal images. As a matter of fact, having experienced these images when under the influence of hallucinogenic drugs (as described in the chapter "Biological Perceptions"), I know for a fact that the fractal images are actually a *more accurate* representation of "universal hallucinogenic images" than the illustrations depicted in Plate 4. That is, the self-similar quality of the fractals is also an inherent and very obvious feature of hallucinogenic drug induced visual images, and this self-similarity is notably lacking from Plate 4, especially frame A. Thus, the conclusion here is that *fractal-like images are perceived when visual perception is altered by hallucinogenic drugs*.

I think it is important to point out that this sense of spiral depth found in fractals is actually an *illusion of perspective* created by the manner in which the self-similar images repeat themselves at progressively smaller scales. That is to say, fractals are two dimensional images, but they have inherently the illusory effect of appearing three dimensional. It could be potentially misleading if we take this spiral sense of depth as a feature in itself as is suggested by the drawings in Plate 4. The psychologist who constructed these drawing was obviously unaware of fractal concepts and left these completely out of the description of "universal hallucinatory images". However, I know from direct personal experience, and it is also illustrated in the Tantric imagery and the quote by Alan Watts, that self-similarity is actually the key to these images, and the spiral sense of depth is actually only an illusion created by this self-similarity, as is clearly illustrated in the fractal pictures.

Incidentally, the work of M.C. Escher fits in here also. If we look to Plate 3, which is an Escher print entitled *Circle Limits IV*, we see here again how self-similarity creates a swirling or spiral sense. Although Escher's picture is not technically a fractal, this picture illustrates how progressively shrinking and repeating an image (this being roughly equivalent to the self-similarity of a fractal image), in this case Devils and Angeles , leads to a very definite sense of swirling.

We can approach this point of hallucinogenic induced perceptions of fractal forms from a second direction. Consider the fact that the "tie-dye" clothing of the hippies was a crude attempt to represent the imagery these people perceived when under the influence of hallucinogenic drugs. I believe there are more sophisticated means available today for approximating such visions. The colors and patterns found in a tie-dye shirt are highly reminiscent of the color patterns produced nowadays by the sophisticated computer generated images of colored fractals.

As a third example of the identity of hallucinogenic images as fractals consider the fabric design known as "paisley". Perceptions of "paisley" are very common under the influence of LSD, and the paisley clothing designs illustrates important features of hallucinogenic drug induced visual perceptions. The organic, plant or amoeba-like structure of the paisley design is highly reminiscent of the organic shapes and forms of fractal images. Also, in this regard, see Plate 12, frame E. Here, the hallucinogenic drug induced image being portrayed looks very much like the amoeba forms seen in the paisley design. Again, I think such considerations make it apparent that fractal images share important characteristics with the imagery experienced when under the influence of hallucinogenic drugs. Though such considerations as these are quite

informal, they point to a definite connection between the images perceived when under the influence of hallucinogenic drugs and images of fractal curves.

It is interesting to note that scientists who have studied the psychedelic experience believe that ancient yogic imagery (represented here by Tantric Buddhist art forms) was drug induced¹⁷, whereas occultists claim that such images are reflections of clairvoyant perception. Quite likely, throughout history, this art was produced utilizing both means. The point is that fractals provide the seemingly disparate phenomena of hallucinogenic imagery and occult perceptions with a unifying scientific conceptual basis: fractal geometry.

Of direct relevance to the present discussion is the fact that Mavromatis in his book *Hypnogogia* goes into great detail discussing the quality of images perceived in altered states of consciousness. He focuses on the relationship of hypnogogic images to the imagery encountered in the following altered states of consciousness: dreams, meditation, the mystical experience, psi phenomena (specifically, telepathy, clairvoyance, clairaudience, psychometry, out-of-body experiences, and trance), schizophrenia, creativity, hypnosis, sensory deprivation, electrical stimulation, hallucinogenic drug experiences, eidetic imagery and epilepsy. Mavromatis has provided probably the most comprehensive discussion on this topic available. His point is that the hypnogogic state shares important features with all of the listed altered states of consciousness. The relevance of his work to the present discussion involves the following statement he makes in the concluding section of his book:

"An important question arising from the study of hypnogogia...concerns the kind of space in which hypnogogic experiences take place. There is a general tendency to use the term 'mental space' in this connection and to refer to it as an 'analogue (presumably of 'perceptual space'). But, (hypnogogic and related) images possess features which are not to be found in physical objects. On the other hand, imaginal objects, concepts, meanings and relationships can be seen, constructed, manipulated; and consciousness can shift to any part of the body or move entirely outside it or become expanded to include, or merge with, other bodies and consciousness. Hypnogogic (and related) imagery can be shared, and it can be telepathic. At the same time it does take place in some form of space, though clearly not in a space governed by the laws of the 3D physical world" (second parenthesis mine).

He then goes on to offer the term "electrochemical field" to distinguish the space of the imagery of altered states of consciousness from the 3-D space of our physical waking experience. However, I don't think this is the most appropriate term in light of all the available evidence.

My present topic concerning occult and hallucinogenic imagery is identical to the issues Mavromatis is discussing. As he has stated in the above quote, *the essential issue here is that of determining the nature of the space, or spaces, in which perceptions occur during altered states of consciousness*. I am approaching this problem from a slightly different angle than has Mavromatis, by focusing primarily on clairvoyant and hallucinogenic drug imagery, though his exhaustive survey shows that these are not the only two altered states of

consciousness relevant to the present discussion. What I am trying to illustrate in this discussion is that one of the primary features of the perceptual space(s) in which altered states of consciousness appear is its fractal nature. The fractal nature of the space(s) of altered states of perception, and how such spaces are related to the occult notion of the planes is discussed in the chapter "A New Concept of Motion" under the section "Nonphysical Geometry".

At this point I would like to focus on the fact that the fractal nature of this imagery points to the presumption that, in both cases--hallucinogenic induced perceptions and clairvoyant perceptions--very similar processes are operating, both cognitively and physiologically. The idea here is that, since the subjective psychological aspects of these experiences are equivalent (i.e., perceiving fractals) that, mostly likely, equivalent, if not identical physiological processes are occurring in the body and brain, at least to some important extent. It is unlikely that dissimilar processes would produce such overwhelmingly similar subjective results.

This now leads us to consider the main issue of elucidating further the connection between fractals, occultism, hallucinogenic experiences and neurosciences. Initially, we used fractals to show the similarity of hallucinogenic induced and occult (clairvoyant) perceptions. Next we said that this indicates perhaps a common physiological basis to these experiences. We can now turn around and ask; just what is this physiological basis? I believe the clue to answering this question lies in the fractal nature of the subjective perceptions resulting from this common process. In this regard, Alan Watts' quote above hits the nail on the head. Perhaps the common process behind these types of perceptions is *the direct perception of the associative and patterning processes used in the brain*. Maybe these perceptions, the so-called "hallucinations" of the drug user and (at least some sub-set of) the images seen by clairvoyants, as well as all the other psychological conditions listed above (epilepsy, sensory deprivation, etc.), are actually *direct perceptions of the physiochemical process underlying the functioning of the brain*. This is indeed the claim I make pertaining to my own experiences as described in the chapter "Biological Perceptions". What we are dealing with here are sporadic cases of micro-psi (or anima), the ability to clairvoyantly magnify and perceive things not seen by our normal vision.

Furthermore, the essential qualitative feature of these physiochemical processes is their fractal nature. It is known that the body is composed of many nested levels of organization. What is interesting is at some distinct level, one can perceive directly fractal images. If indeed such perceptions are the utilization of micro-psi, they point to the conclusion that physiochemical structure at some level is distinctly fractal. This then would provide the connecting link between fractals, occult perceptions and hallucinogenic perceptions on the one hand, and the role played by and the implications for neuroscientific knowledge on the other hand.

The primary implication of this hypothesis is that a basis is provided for understanding the mechanisms of our psychological behavior in the connection between fractals, hallucinogenic perceptions and clairvoyance. In other words, it is highly conceivable that one could build a *unified* modern neuroscience, one capable of encompassing occult realities, by understanding the fractal nature of perception. This is, no doubt, an extreme claim to make. What do we mean by a unified neuroscience? A unified neuroscience will consist of a model of the physiology of psychological processes based on the fractal-like properties of nervous system organization, a model that will most likely be coupled with ideas from chaotic systems theory¹⁸.

When we look at the branching structure of the nervous system (as for example portrayed in Figure 1), it is obvious that fractal ideas apply to neurological organization. If we add to this the fractal nature of imagery perceived in altered states of consciousness, then it only reinforces that neurological processes are fundamentally fractal in their organization. Elucidating the details of the fractal organization of the nervous system, both in terms of structure and function is what I mean by a unified neuroscience.

In terms of synthesizing scientific and occult knowledge, I think this is the pivotal connection to make: *Hallucinogenics provide a controlled means for inducing clairvoyance and thus can allow for the establishment of a physiochemical basis for occult as well as "normal" (and seemingly "abnormal") psychological phenomena.* Again, this exact claim is illustrated in detail in the chapter Biological Perceptions, but it has also been put forth by other scientists¹⁹.

These statements, however, must be qualified from a couple of different levels. First off, the occult has a poor enough reputation as it is in circles outside its own (and even then there is some question) and to now associate occultism with hallucinogenic drugs will probably create indignation in occultists. I mentioned briefly Leadbeater and Crowley's attitudes towards the use of these drugs, and they don't even agree to their value. Theosophical occultists will dismiss the use of such drugs as detrimental. Thus, to implicate occult means of perception with hallucinogenic drugs will not generally rate the approval of occultists.

Likewise, as fractals are a burgeoning science, they do not need the bad publicity of being associated with either occultism or hallucinogenic drugs. But in contrast, all of those people who have experienced the profound effects of hallucinogenic drugs will recognize immediately the validity of the claims I am making. The situation is most definitely a trade-off in terms of whose interests are being served. My motivation is ultimately that of explaining things that I know intuitively to be true.

Also, to use hallucinogens in the manner I am suggesting raises the issue of controlling the hallucinogenic experience. This was one of the first major factors discovered by early researchers; that the actual hallucinogenic experience was highly variable and unpredictable. This led to the wide adoption among LSD researchers of Timothy Leary's notion of "set and setting". This is an extremely important point and cannot be ignored when discussing the hallucinogenic experience. However, in this regard, I do not merely envision the administering of these chemicals to subjects, and the subsequent observation and description of their behavior in occult terms by scientists. Though I do envision the study of subjects who have been administered hallucinogenic drugs, the main thrust of what I envision is scientists administering the drugs to *themselves* and describing their own subjective experiences in occult terms (and whatever other terms are appropriate to capture the nature of the perceptions), as opposed to either religious terms, or traditional psychology terminology, as has been done up to this point in time. I will give a concrete example of this approach in the next chapter.

I could present many instances of very feasible overlap between scientific concepts and occult and hallucinogenic experiences which could lead to more than just speculation and talk, and lead instead to the designing of real and do-able experiments. For example, I would suggest that one of the effects of hallucinogenic drugs, since these drugs cause a limited degree of clairvoyance, is to mimic the activity of stimulated chakras. This suggestion, if pursued in an

experimental context, could provide very concrete means by which traditional physiologists and psychologists could study "occult means of perception", as well as the relationship between the chakras and normal physiology and psychology, under controlled laboratory conditions, thus providing another empirical angle by which to synthesize scientific and occult techniques of experimentation.

Let us analyze in more detail the contention that hallucinogenic drugs stimulate the chakras. As described previously, the activation of the chakras is effected by awakening the kundalini. The awakening of the kundalini causes profound changes in both the body and psychology of the subject. That the enhancing of kundalini causes very definite changes in the physical body means that this process can be characterized in physiological terms. As a matter of fact, steps have been made in this direction. Gopi Krishna has propounded excellent criteria by which to assess the physical effects of kundalini release²⁰. Under such impetus studies have been performed which show definite alterations in breathing, pulse and heart rate, EEGs, blood gases and other large scale physiologic changes²¹.

As well, a number of excellent hypotheses and theoretical directions for refined measurements of enhanced kundalini have been proposed. One such proposal is Philip Lansky's suggestion that kundalini enhancement correlates with increases in 10-methoxyharmalan production in the brain and a concomitant decrease in sex hormone production²², which agrees with the yogic idea that sex drive and kundalini release are inversely related. There is also Itzhak Bentov's model of the micromotion of the body, which is a model of how the various body structures can potentially form resonant oscillators with each other leading to the production of increased magnetic currents in the cerebral cortex²³. Bentov correlates this enhanced electromagnetic action in the cortex with kundalini release. Other authors have suggested a number of neurologic and physiologic correlates with the state of awakened kundalini, including models based on the limbic system, the sensory cortex, and even the phenomena of kindling²⁴.

Though by no means complete, these ideas taken together paint a reasonable picture of the actual bodily changes that result from awakening the kundalini. And it is this picture, this physiologic profile of enhanced kundalini, that is relevant in the context of the claim that hallucinogenic drugs stimulate the chakras. For if this is indeed the case, then the reasonable prediction is that *the physiological changes accompanying hallucinogenic drug administration will be similar to those observed during enhanced kundalini release*. This prediction could be tested easily using standard physiologic techniques. Using this type of model, perhaps the most important indicators would be changes in endocrine hormone profiles and changes in neurological function. To show similarities between hallucinogenic induced states and states of enhanced kundalini would be strong circumstantial evidence for the claim that hallucinogenic drugs stimulate the chakras. Of course, if such tests showed large differences in the physiologic profiles between kundalini and hallucinogenic drug subjects, then the hypothesis that the hallucinogens stimulate the chakras would be weakened greatly.

However, I doubt that such would be the case. First hand accounts of those experiencing kundalini awakening are extremely similar to first hand accounts of subjects on hallucinogenic drugs. Consider the following quotes:

"When the empowered prana [i.e. kundalini] moves through the body, it creates various external and internal movements. On a physiological level one can experience the following: heat, cold, automatic breathing of various kinds, mudras, locks, postures (which are done with perfection even if the aspirant knows no Hatha yoga), laughter, tears of joy, utterances of deformed sounds, feelings of fear, the curling back of the tongue, revolving of the eyeballs, temporary stopping of breath without effort, an itching or crawling sensation under the skin, and singing with ecstasy and joy.

These cleansing kriyas and exercises may be practiced for many years by those who do not have the fortune to receive kundalini initiation. Strangely enough, however, the initiate [i.e. one who is experiencing a bona fide kundalini awakening] performs them automatically, guided from within, without the study of external sources. On a subtle level, one may experience divine harmonies, the sounds of various instruments or mantras, the taste of divine flavors and the smell of sweet fragrances, or divine lights and colors. One may recall past lives, be poetically inspired, feel drunk with the ecstasy of divine bliss, have frightening dreams, or remain completely silent. During all this the mind remains filled with joy. On an intellectual level, the hidden meaning behind the scriptures and spiritual texts are revealed. Intuition and psychic powers put one in touch with the divine, bringing security, peace and a feeling of unseen guidance and protection."²⁵ (brackets mine)

Now compare the above quote to the following partial list of effects caused by hallucinogenic drugs:

- "1. Visual hallucinations.
2. Audio hallucinations.
3. Sensory mixing (hearing sights or seeing sounds).
4. Weakening of ego boundaries (a weakening or loss of sense of self).
5. Enhanced ability to think abstractly.
6. The uncontrollable urge to laugh.
7. Enhanced ability to sense the emotions of others.
8. Inability to maintain focus or concentration for long periods.
9. Feelings of extreme joy
10. Feelings of extreme depression and terror.
11. A direct apprehension of God."²⁶

There is no question that the effects of hallucinogenic drugs, in terms of what the subject is perceiving, are overwhelmingly similar to what a subject who is undergoing kundalini awakening experiences. Thus, on this basis alone, one would expect the physiology of these two states to be very similar.

Furthermore, all of the above listed effects of hallucinogens can be conceptualized in terms of the kundalini enhancement of the activity of specific chakras:

1. Thus, visual hallucinations are in actuality the stimulation of the third eye chakra, leading to some degree of clairvoyance, which is the perception of the adjacent planes.

2. Audio hallucinations are the stimulating of the throat chakra to hyper activity. In this case, one begins to hear on, for example, the astral plane.

3. The mixing of sensory modalities is an effect of the crown chakra, which is the site of integration, not only of sensory perception, but astral perception (emotions), and mental perception (thinking). Thus, at the point of integration (crown chakra) all separate modalities are blended into a unified consciousness. This effect is enhanced under hallucinogenics. And the hallucinogenic effect is even more pronounced because of the fact that we rarely recognize this integration to begin with. It is there all along but we don't see, and when the drug stimulates the crown chakra and we are forced to look at this integration of the modalities of our consciousness, it seems surprising to us.

4. The weakening of ego boundaries is again an effect of increasing the activity of the crown chakra. In this case, it is not so much that the ego is loosened but that the ego is seen in its proper perspective in the totality of our organization as a human being. Again, this is an effect of the integration function of the crown chakra. The ego (which effectively is our personal identity) is but one facet of our being. In our day to day life however, we tend to over emphasize our ego at the expense of other facets of our being. Again, the hallucinogenic stimulation of the crown chakra only serves to put things in a realistic perspective.

5. Enhanced ability to think abstractly. What is happening here is that the hallucinogen triggers off such an enormous increase in kundalini energy that our mind is capable of perceiving a much vaster range of the mental plane. This effectively translates into broader, more sweeping and more abstract thoughts.

6. The uncontrollable urge to laugh is a classic phenomena indicating enhanced chakra activity. Laughter is a release of tension. Increasing the activity of chakras is also a release of tension. The increased chakra motion effectively burns up the extra energy. An experienced LSD user is unlikely to have this laughter effect, only a novice who is not used to the sensations of enhanced chakras would express these sensations by uncontrollable laughter. This is very similar to how people laugh when they are nervous or cry when they are very happy. However, on the hallucinogen, the effect is greatly increased.

7. The enhanced empathic ability is mainly a function of the hyper stimulation of the heart chakra. Our whole ability to be sensitive to the emotions displayed by others resides in the heart chakra. The hallucinogenic stimulates the heart chakra, so it is no surprise that a typical hallucinogenic user is more sensitive to the feelings and attitudes of others.

8. Inability to maintain focus or concentration for long periods. Here we run into a situation that is probably more a function of the brain than of the chakra system. It should be pointed out that experienced hallucinogenic users will report that this effect only lasts for a small percentage of the time that the drug effects are occurring. Probably what we are seeing here is the maximum effect of the actual chemical in the physical body in which there is a maximum disruption of the normal function of the neurons in the brain. Again, this effect is short lived (usually about 30-60 minute). It seems that this effect is a prelude to the effect of thinking abstractly. It appears that we are dealing with distinct phases of the drug experience in which the initial, drug-induced confusion is followed by an enhanced lucidity as described above in 5.

9 and 10. Feelings of extreme joy/feelings of extreme terror and/or depression. What we have here is an amplification of one's normal emotional state by the enhanced kundalini triggered by the drug. Whatever the user is feeling becomes greatly magnified, so reports of extreme emotional states are common. Also, since emotion is generally a function of the operation of the heart chakra, we find here evidence that the hallucinogen is affecting this chakra.

11. Finally, the direct apprehension of God. As stated above, the mystical ramifications of hallucinogenic drugs has been clearly recognized by others²⁷.

We have already stated that occult theory teaches that kundalini enhances the chakras. Enhanced chakras in turn lead to siddhis. Thus it is no surprise in the above quote describing kundalini awakening that the subject experiences siddhis: having super-normal perceptions, recalling past lives, etc. What is amazing is that these effects are very, very similar to what the subject on hallucinogenic drugs perceives. Again, this evidence all points to the conclusion that, whatever hallucinogenic drugs are doing in the body, it is very similar to the descriptions of awakened kundalini and enhanced chakras.

The realization that hallucinogenic drugs mimic active chakras gives us a biochemical basis by which to understand how chakras operate. That is, traditional biochemical investigations into the biochemistry of the hallucinogenic experience could lead to a deeper understanding of the biochemical phenomena associated with the chakras. However, the biochemical mechanisms underlying the effects of hallucinogenic drugs are little understood, though a recent review article offers some suggestions²⁸. It is interesting that in reference 28 this author implicates a subcellular system known as the "cytoskeleton" in the molecular effects of hallucinogenic drugs. Major components of the cytoskeleton are long fibrous molecules called "microtubules". Microtubules are being more and more implicated in the neurophysiology of perception. One possible connection between microtubules and hallucinogenic drugs will be illustrated in a novel fashion in the next chapter.

What the details of such a program of research utilizing hallucinogenic drugs would entail in biochemical terms can only be speculated at this point. It seems reasonable to speculate that we would be dealing with changes in endocrine hormone production, changes in neurotransmitter activity throughout the central nervous system, and perhaps as a result of changes in transmitter activity, we would observe global changes in the electrical activity of the

various regions of the brain. Serotonin containing brain regions are already highly implicated in hallucinogenic activity. The connection between hallucinogens and kundalini expressed here would also implicate such brain regions as being important in the state of enhanced kundalini. Likely, the entirety of brain function is severely altered with both hallucinogenic drug administration as well as enhanced kundalini activity. As well, based on yogic teachings, we would expect to see drastic changes in the activity of the pituitary and pineal glands.

Unfortunately, in spite of the great potential of using hallucinogenic drugs as a research tool into the mechanisms of siddhis, one has to defend hallucinogenic drugs in light of the generally negative image these drugs have. This topic unfortunately is one in which people generally ignore the evidence and allow their preformed attitudes to color their judgement²⁹. In this case it is an amazing pity because these drugs actually hold a substantial key to a truly empirical (as opposed to merely intellectual) synthesis of scientific and occult approaches by tying in concepts of occult anatomy with modern physiology, biochemistry and psychopharmacology. The ignorant and misinformed view of this family of drugs will severely retard any substantial scientific understanding of clairvoyance and nonphysical reality in terms of traditional physiology and biochemistry. I will have more to say about this issue at the end of the next chapter.

The alternative to utilizing these drugs is to rely solely on actual clairvoyant investigations about such matters performed by individuals who possess such abilities. This approach is feasible, yet limiting because of the rarity of such individuals. Also, it is highly unlikely that a clairvoyant individual would *want* to be employed to determine how mechanisms of hallucinogenic drug action are equivalent to mechanisms of clairvoyance. In reality, the clairvoyant approach (if it could be arranged) coupled with a detailed study of the effects of hallucinogenic drugs in traditional scientific terms would give the optimum and most well-rounded scientific study of these issues.

Realistically, however, this is all very unlikely. First: the scientific community in general does not give any legitimacy to occult claims, and second, hallucinogenic drugs are a relatively taboo topic in both scientific and medical research, although the inherent utility of hallucinogens appears to be gaining some acceptance as of late. According to Gallagher and Winifred³⁰:

"The scientific study of LSD is poised for a comeback. In the outcry of the drug abuse epidemic of the early 1970s, voices of moderation stating that LSD was a fascinating if unruly research tool were drowned out, and the government stopped human experimentation with hallucinogens. Research on LSD never really stopped, however, and now it discreetly thrives again. Animal research on LSD continues to help scientists learn about a crucial area of brain neurochemistry: the role of the brain chemical serotonin as a mediator of certain types of behavior. This research in turn boosts the effort to find the origin of certain brain dysfunctions and to develop new drugs for eating, sleeping and mood disorders. Some scientists argue that human research with hallucinogens, which is still severely limited, could be useful, and they believe that such research will return as increasingly sophisticated compounds appear."

Unfortunately, this 1990 prediction has not come to much fruition. Furthermore, the tone of LSD research, if indeed it does come to pass that LSD is recognized as a useful research tool, will be that of LSD as it relates to brain pathologies, as stated in the above quote. To make the connection between hallucinogens and occultism is perhaps too much to ask of the scientific community as it exists today.

Yet I am presenting the ideas of this chapter under the supposition that to "sweep a thing under the rug" because it does not fit into our preconceptions (or actually prejudices), especially these two particular matters of occult experiences and the effects of hallucinogens, is to only invite trouble by ignoring factors that will become more prominent over time even if their existence is ignored. Furthermore, it is simply scientifically dishonest to ignore these issues because they are socially taboo topics, especially if one is familiar with the evidence and the broad implications of these both hallucinogenic drugs and occultism. When it comes right down to it, as I say elsewhere, this situation is not unlike that faced by Galileo in his day as he faced the prejudice and dogmatism of an overly scholastic and overly rigid Church. Only today it is the institutionalized rigidity of modern science that is playing the role of the Medieval Church.

Notes: Chapter 12

¹For a fairly technical introduction to cellular and molecular brain anatomy see Eccles, (1973).

²Here I mean the new approach in psychology called cognitive psychology, see for example Anderson, (1980).

³Wallace, (1973).

⁴An excellent source of information regarding physiologic studies into meditation and kundalini is found in White (1990).

⁵I have three college level introductory psychology texts and only one discusses this issue. The text is Davidoff, (1980).

⁶Brooksmith, (1984), 57-61.

⁷Crowley, (1961), on page 52, says:

"Concerning the Use of Chymical Agents, and be mindful that thou abuse them not, learn that the Sacrament itself relateth to Spirit, and the Four Elements balanced thereunder, in its Perfection."

⁸Leadbeater, (1985) page 90-92. Leadbeater's concern with the use of drugs in stimulating the chakras to produce siddhis appears to be that this can have detrimental impacts on other levels of our occult anatomy. For example, Leadbeater speaks of an "etheric net"

which serves the function of filtering out unwanted stimuli from the etheric and astral planes, and how drugs can damage this net thus opening up the individual to unhealthy and unwanted nonphysical influences. It is likely that this "etheric net" he is speaking of is the meridian or nadi system of acupuncture as discussed in section 6.1.2. That drugs can affect this system points to definite connections between human physical and nonphysical anatomy.

⁹See Leary, (1964) for an example of how early scientific investigations into the psychotropic effects of LSD were interpreted in religious (as opposed to occult) terms.

¹⁰Hansen, *et al*, (1988).

¹¹John Lilly interview, *Omni*, Jan. 1983.

¹²Watts, (1966).

¹³For detailed occult tantric techniques see Chia and Chia, (1986).

¹⁴Castaneda, (1971).

¹⁵Mandelbrot's ideas of fractal geometry did not receive widespread notice until after 1977.

¹⁶Davidoff, (1980), page 232.

¹⁷Aaronson and Osmond, (1970), pages 462-463.

¹⁸For an example of the application of chaos theory to issues of neurophysiology see Freeman, (1991).

¹⁹This claim is also put forth in a 1985 paper in which it is stated "Thus, a neurophysiological orientation may enhance the understanding and control of both ESP and psychokinesis". This article is Roll and De A Montagno, (1985).

²⁰White, (1990), pages 221-254.

²¹*Ibid.* pages 221-348.

²²*Ibid.* pages 295-298

²³*Ibid.* pages 316-340

²⁴*Ibid.* pages 298-310

²⁵Ibid. pages 72- 73.

²⁶DeGracia, (1993).

²⁷ Zaehner, (1972).

²⁸This is not, fortunately, absolutely true. In 1989, a review article discussing the possible biochemical basis for hallucinogenic drug action was published. In connection to what I have said, mainly in the essay Biological Perceptions, this paper interestingly enough implicates microtubules in the effects of hallucinogenic drugs. Also this paper illustrates that an understanding of how these drugs work is intimately related to having a detailed understanding of how the brain works. This paper is very technical, but has some good references. See Van Woerkom, (1990).

²⁹This point about preconceived notions affecting the perceptions of hallucinogenic drugs, in spite of the evidence is made in a recent paper discussing the role of psychedelic drugs as tools in psychiatric research and therapy where it is pointed out that:

"The decline in the utilization of these substances is linked to social reactions, which led to psychedelics being scheduled as controlled substances and consequently unavailable for human research... The high-dose psychedelic paradigm frequently produced reports of mystical or spiritual experiences, thus recasting the psychiatrist as the modern-day shaman. This paradigm has alienated many in the psychiatric profession and has led to a reaction against the use of psychedelics in psychotherapy". See Bravo and Grob, (1989).

³⁰According to Gallagher and Winifred, (1990):

Chapter 13. Biological Perceptions

This chapter will be more personal than the other chapters of the book. Here I would like to discuss a few among many of the personal experiences I have had that have led me to the concepts discussed in this book. These are my actual experiences with altered states of consciousness. These experiences encompass basically two categories:

1. My hallucinogenic drug experiences.
2. My astral projection/lucid dream experiences.

I would now like to describe perceptions I have had during my experiences with altered states of consciousness that are most directly relevant to the material in the other chapters. The following will literally be my first hand account of things I have seen in altered states of consciousness. The format of this chapter will be autobiographical. I will tell of a few select personal experiences and then comment on what I feel the significance of these experiences has been in terms of my personal response to them, and my ultimate interpretation of these experiences in scientific and occult terms. It is in this chapter that I leave behind mere intellectualizing about the nature of occultism and its connection to modern science and offer my own proof, my own first hand accounts, of occult realities and the need I have discovered to combine both science and occultism to make sense of these experiences to myself. Later in this chapter I will lay out what I feel is an appropriate conceptual framework by which to understand the implications of what is discussed in this chapter.

One set of remarkable observations I have made that will form the focus of this chapter is that, at certain times during my experiences with altered states of consciousness, I can literally *see* the *inside* of my physical body at its various levels of organization. That is, somehow or another, images appear in my visual field that are distinctly reminiscent of biological structures. With my background in science, I have looked under a microscope enough times, dissected enough animals, and seen enough photographs in biology textbooks to know that the images I have seen in altered states of consciousness are too identical to biological structure to be simply a coincidence. What I am saying is that I have seen things, completely unaided by any mechanical instrument, that are thought to be perceivable only via some form of microscopy. These perceptions of my own physiology I call "biological perceptions".

Unusual as this claim may sound, there are scientific authors who have also put forth the claim that some levels of perception in altered states of consciousness may be direct perceptions of physiological and biochemical events. In reference to the visual images perceived in the hypnogogic state (this being the state between sleeping and wakefulness in which we often find ourselves as we are falling asleep or waking up), Mavromatis says the following:

"As we know from the study of the phenomenology of hypnogogia many people experience sensations of falling, drifting, swelling, sinking, flickering or flashing light, swirling clouds of colors, explosions of sounds, etc. Whether these are to be seen as autosymbolic phenomena, as van Dusen tentatively suggests, does not preclude them from being translations

of psychic activities, or indeed of being actual 'inner' perceptions of such activities...as Leary argued in respect to hallucinogenic-drug experiences, a 'direct awareness of the processes which physicists and biochemists and neurologists measure',¹ that is, cellular and electron activities which may collectively (in groups) correspond to psychological processes. However extreme in scope and speculative this idea might seem *prima facie*, it might not sound all that unlikely when seen in its proper perspective."²

Indeed, as extreme as this claim seems, it is this claim I will put forth and substantiate in this chapter. It is interesting to note in the above quote that Timothy Leary is claiming that hallucinogenic drugs induce what I am calling "biological perceptions", for this is the exact type of experience I shall describe in this chapter. Ultimately, the issue here is one of significance in that the ultimate question becomes: what is the significance to give to such perceptions? As we proceed, we will see that this is truly the fundamental issue regarding "biological perceptions", and indeed, any imagery perceived in altered states of consciousness.

My biological perceptions fall into three distinct classes:

1. Things I have seen when under the influence of hallucinogenic drugs.
2. Things I have seen (or more accurately--"places" I have been) when in the lucid dream state.
3. Things I see when I fall off to sleep (i.e. in the hypnogogic state).

None of these classes is simple to describe. First off, in some respects the distinction between these categories is arbitrary, especially numbers 2 and 3. An alternative breakdown of my experiences perceiving microscopic biological structures could be that of:

1. Drug induced perceptions.
2. Sleep (or "trance") related perceptions.

For various reasons, to be elaborated ahead, I prefer the three class categorization. Yet, I will be flexible in this regard since the nature of the experience is not easily categorized. Furthermore, I am not going to discuss my sleep related perceptions to any great extent in this book, so we need not worry about how I classify them.

The first thing I want to point out about these perceptions is that they are very complex. That is, whether my perceptions of biological structure be drug induced or sleep related, I rarely see the exact same thing twice. There is one exception to this, that being the things I see in the hypnogogic state as I fall off to sleep. This, as a matter of fact, is why I relegated these particular perceptions to their own class; for I often see the same images every night as I fall off to sleep. In the other two classes I may or may not see similar things. I will discuss this aspect more fully as we proceed, but at this point I will say the following about the complexity of these visual perceptions.

First, biological structure itself is highly complex, existing as a hierarchy of simultaneous levels of activity (or nested levels of resolution, as I have described in section 3.2). In my sleep and drug related perceptions this is a primary factor in terms of interpreting what I am seeing.

Second, the imagery itself is made up of complicated and subtle structures that are rapidly moving (that is, highly "dynamic"), and these perceptions are not easy to describe in words, or even to represent with pictures. This will be obvious when I describe some of these experiences.

Third, in terms of my hallucinogenic drug induced experiences, which are the focus of this chapter (and I stress that these are hallucinogenic drugs only, with no exceptions), since these drugs are illegal I do not know what compound I have ingested, its purity, concentration etc.. As a biochemist with some knowledge of pharmacology, I know these are very important factors when discussing the actions of drugs within the body. Thus, not having this information, I am at a loss to go too deeply into the pharmacological aspects of my drug induced occult perceptions. I would assume that the variability of my drug induced perceptions is, in part, strongly influenced by such factors. Thus, that there is a high degree of variability in my biological perceptions, be they drug or sleep related, is no real surprise.

The next preliminary consideration is that there is a further degree of complexity introduced into the discussion in that my observations are open to any number of equally plausible, albeit speculative, interpretations. However, the processes of perception in general are little understood in scientific terms as I have stressed throughout, let alone a seemingly anomalous type of perception as I am about to describe. Such factors obviously create interpretive difficulties. Further, I have observed and experienced things that I have never found direct descriptions of, even in the occult literature, though statements here and there are very suggestive (as I'll show below). What is very significant though is that often occult diagrams, especially Tantric art as I have used in the plates, are highly reminiscent of the imagery of my biological perceptions. It is primarily my biological perceptions that led me to make the claims put forth in the previous chapter about neuroscience.

I would suggest that many of my observations not only shed light on the biological mechanisms of normal perception, they also show that present scientific concepts of the human perceptual apparatus are too limited. This in itself possesses some startling implications, especially with regard to accepting and understanding the claims of occultists. The perceptions I am about to describe are common to the occultist, but not the scientist, and again, this is because science itself is ignorant of occult realities.

On an altogether different line of thought, what I am about to describe could easily be open to the interpretation that I am crazy, mentally or physiologically unbalanced or some type of emotionally disturbed attention seeker. Perhaps this is how a modern psychologist, of whatever school of thought, would interpret the experiences I am to describe here. Yet I know I am not crazy. I mention this interpretation now simply to be fair. Mavromatis' work above illustrates that I am not the only person to make the type of claims put forth here. It is my hope that, as we proceed, the reader will realize that I have thought very deeply about these experiences, analyzed many possibilities in a calm and rational manner, and have tried to present this material in the most reasonable and sane manner I am capable. I do not believe that it is my sanity that is in question. What I believe to be in question here are certain implicit assumptions of a moral and intellectual character made by our present civilization as a whole.

This leads to the final preliminary consideration before I proceed to a detailed description of my experiences and that is the question of the use of hallucinogenic drugs. It is ironic and ultimately hypocritical that our society singles out certain drugs (i.e. marijuana, cocaine, heroin, LSD) as "bad" while at the same time our medicine chests are full of unpronounceable prescription drugs and strange drugstore remedies that are never given a second thought, and that a drug like alcohol with its ability to turn a person into an uncontrollable idiot is legal. Much has been said about this topic and debates still rage. However, I want to again stress that mind-altering substances, or psychotropic drugs, are barely

understood at all. In the previous chapter I have referenced the most up-to-date notions pertaining to these substances and the effect they have on the brain and mind. These references offer only the most speculative and tentative explanations of the modes of action of psychotropic (or mind altering) drugs (see note 17 to this chapter). This present lack of scientific knowledge of these drugs is potentially more devastating than any other problem faced by modern science, for these drugs are very real and produce extremely profound psychological effects that challenge both scientific concepts and our everyday social norms.

As I have already said, no one really knows what is going on, in scientific terms, with the relationship between mind and body. Therefore, it is not surprising to realize that *no one really knows what hallucinogenic drugs do*. Only the smallest of efforts have been made in scientific directions. The suggestion I have presented in this book, that psychoactive drugs stimulate the chakras, by an unidentified physiological mechanism, is the most reasonable explanation there is about the mode of action of these drugs.

The mind (or more broadly, our subjectivity) itself is *the* final scientific frontier and ultimately, our present social taboos on the use of mind-altering substances, as one means among many for unlocking the rich and profound secrets of the mind (or of our subjectivity), are but trivial hindrances and mere passing fads. I will repeat, this situation of attitudes towards mind-altering drugs is not unlike that faced by Galileo's confrontation with the dogma of the Church in his day; societies rise and fall, value systems come and go, but science marches on.

Having said the preliminaries, I will now proceed to describe some of my biological perceptions.

13.1 Direct Perceptions of Physiologic Structures

What I believe were my first biological perceptions occurred when I was very young, four or five years old. At night when I went to bed I would see strange patterns of colors filling the air around me. I was not dreaming and I knew I was not asleep (and, in retrospect, I can say with completely certainty that I was not in the hypnagogic state either). These patterns were usually green, sometimes they would change to red and then turn green again. As a child, all I could think to conceptualize these visions was that they looked like baby-pins, though I knew they were not. Long rows of green things that looked baby-pins filling the air around me; many a night I fell asleep seeing these. I would ask my mother what they were and she said I was just dreaming. I tried to explain to her that I wasn't dreaming and I saw them before I fell asleep. But nothing else would be said and the subject would change. As I got older, my curiosity about the green baby-pins still persisted, but the imagery I saw transformed. Eventually the green baby pin imagery ceased and what I saw as I fell off to sleep were myriads of white-yellow points of light swirling about me and filling the darkness.. I have always wondered: What are they? Even today I can still see them any time I want--all I need to do is focus.

With regard to these white-yellow points of light that I see, either in a dark room or when I peer into the darkness behind my closed eyes, according to Mavromatis, this is a phenomena known in psychology as "ideoretinal light". This phenomena has also been called "luminous dust", "entopic light", and "eigenlicht". Apparently the perception of ideoretinal light is a relatively common occurrence, and Mavromatis documents many cases of it. Ideoretinal light is supposedly produced by the random discharge of nerve cells in the retina of the eye either because the nerve cells fire randomly or because

stray light gets into the eye and causes the retinal cells (rods and cones) to discharge. The resulting affect is the perception of seeing white-yellow dots of light filling the space around a person. Mavromatis points out that some investigators feel that the ideoretinal light is "the stuff out of which hypnogogic and sleepdream visions arise"³. Yet even Mavromatis admits that "It remains, of course, debatable whether the 'specks' are indeed of ideoretinal origin"⁴. Below, I will discuss a neurological mechanism, called "dark noise" that may, in part, account for not only the phenomena of ideoretinal light but also provide part of the mechanism underlying the biological perceptions I will describe.

Regarding debates about the origin of ideoretinal light, I would like to point out that, because of hypnogogic and hallucinogenic drug induced perceptions I've had, I do not believe that these specks are produced solely by the random discharge of nerve cells in the eye. What I have observed in hypnogogic states and hallucinogenic drug induced states of consciousness is that these "specks" are actually the light given off by the nuclei of nerve cells. I have literally observed, in the hypnogogic state, in the lucid dream state, and under the influence of hallucinogenic drugs, images of structures that look identical to light microscope images of nerve cells, and I have seen the nuclei of these cells glowing and giving off light. I do not know at what level of tissue organization these cells belong, but it is apparent that at some level of tissue organization, at least a class of nerve cell nuclei literally scintillate light.

Again, this direct perception of nerve cells is not an unprecedented situation. Mavromatis documents claims from other investigators as to having seen nerve cells in the hypnogogic state, as exemplified in the following quote:

"[I saw] something like a starfish, but the arms were but slender threads springing from projections of the central body...Both the centre and the arms glowed with brilliant light, like that of a full moon....I recognized it instantly as one of the 'giant star shaped cells' of the nervous system...A thrill of excitement went through me--and instantly all disappeared."⁵

It is interesting to note that this individual also saw the glowing property of the nerve cell, though in this case it appears that the whole cell glowed and not just the nucleus (a property that fits closely with the self-glowing quality of astral matter as reported by occultists).

In my own experiences I have literally seen the "ideoretinal light" transform into glowing nerve cell nuclei (and in other experiences I have seen this light transform into the stars of outer space, suggesting some interesting connections). The way in which the ideoretinal light "transformed" into the scintillating nerve cell nuclei was by a shift in my perception, or focus, as if I was going back and forth between two related perceptual levels. Again, we will discuss this topic in more detail below.

Returning to the history of my experiences with hallucinogenic drugs, these had little to do at first with the green "baby-pins" I saw as a child, or the ideoretinal light I see even now. My early experiences with these drugs were stimulated by the two major effects they had on me. First, when I was under the influence of these drugs, I thought about things that would have normally not occurred to me. That is, I became very "philosophical". Second, when on these drugs I experienced very intense visual hallucinations. As interesting and profound as has been the "philosophical" side of these experiences, it is simply too much to go into in any detail at this point, but the fruits of this form other chapters of this book, especially the philosophical views presented in section three.

However, regarding the "philosophical power" of these drugs, I feel that the ability of these drugs to increase one's sense of wonder and to enhance the scope and depth of one's insightfulness is a

very important aspect of the hallucinogens and suggests much about the biochemical mechanisms of the cerebral cortex as well as shedding light on the whole issue of the mechanisms of thought. As well, as has been much discussed⁶, this topic is intimately related to the physiology of the mystical experience. That is all I want to say at this point about the ramifications of these drugs on cognition, thought and mysticism. It is the second of these two main effects, the visual hallucinations, that I am interested in here.

My early experiences with visual hallucinations were of the very common variety such as seeing inanimate objects such as walls and chairs "breathe", or the commonly reported experience of seeing "trails", a visual experience very similar to stop-motion cinematography or stroboscopic motion. Fascinating as these were to me at the time--or perhaps a better word to use is enthralling--the visual experience that has captured me from the first was what would happen if I shut my eyes or went into a dark room. Under those conditions I would see behind my closed eyes the most excitingly beautiful panorama of colors. Even Alan Watts' quote in the previous chapter does not begin to capture the essence of these color patterns. A literal psychedelic kaleidoscope of images would fill the space behind my closed eyes or fill the darkness around me if I had my eyes open in a dark room. At the time I was very much involved in drawing and I knew that what I was looking at was impossible for me to draw. The colors were too delicate, the patterns too complex and even worse, the patterns changed so rapidly that I could never even really get a good look at them at any instant. It was a very intimidating experience in that respect.

Today with the advent of computer graphics, it is possible to program a computer to generate images reminiscent of LSD hallucinations and I have even seen computer graphic animation highly reminiscent of the hallucinations I would see. I'm referring of course to fractal images, though these too, even though they are suggestive, pale in comparison to the actual visual perceptions possible with psychoactive drugs. This connection to fractals is an important aspect of drug induced biological perceptions, extremely rich in its implications. I have already discussed the connections between fractals and altered states of consciousness in the previous chapter, but we will go into this extremely important point below and in the following chapter.

Even more important than the sheer beauty of these visual perceptions was the awe and curiosity I felt while perceiving these images. I would stare enchanted by these dancing shifting images and just wonder what the hell I was looking at. And in many respects, the curiosity, fear, wonder and frustration I had felt then has served to drive me to what I am now and, in many respects, this chapter in particular, and book in general are a resolution to the feelings that were generated in me by these experiences.

Before proceeding any farther I would like to point out what I mean when I use the word "hallucination". Normally, this word implies that what is being perceived is not real. However, I am simply using the word "hallucination" here to refer to my drug induced, altered visual perceptions, and I do not mean to imply that these are not real by using this term. As a matter of fact, I obviously feel that these "hallucinations" are very real in that I am perceiving something that is real, only it is something not commonly perceived in our usual states of consciousness. These hallucinations are real in the sense that they are perceptions of nonphysical realities. There is no question in my mind that "hallucinations" are real, and furthermore, that there must be some very real neurological mechanism behind these perceptions. This *must* be the case since a chemical (LSD, mescaline, etc.) can trigger these

perceptions. I want to be very clear in stating that it is only as a matter of convenience that I shall refer to my drug induced perceptions "hallucinations".

Now then, my first full-scale hallucination occurred about the age of 15. I had taken three hits of orange sunshine, a very small orange pill that is presumably highly pure mescaline. The initial visual effect was an experiencing of "trails" to a degree I had never seen before, but, at a certain point, my entire visual field became overlaid with a vast hallucination of chains within chains within chains. At the time I didn't use the term, but in retrospect, this was to be my first "full-body" hallucination. That is to say, my entire visual field was replaced by a hallucination. It should be explicitly mentioned that these hallucinations are of an incredibly dynamic character. They move, they dance, they spin and spiral round and round. The character of the motion is very unique. Drug induced hallucinations have the quality of seeming to tail-spin into themselves, much like the Oroborous, the snake eating itself from the tail. This was one of my initial perceptions of what I refer to as the Möbius process in chapter 10. One can get a slight sense of the paradoxical quality of this motion by looking at the Möbius loops depicted in Plate 1.

I sat staring at these chains so absorbed that I seemed to blink back and forth between the room I was in at the time and the hallucination of these spinning chains. When I could see the room I was in, the imagery of the moving chains overlaid my normal visual perception. This imagery would become so intense however, that it would overwhelm and dominate my normal visual field and I would lose visual perception of the room. Again, the effect was like a shifting of focus, or a visual sliding back and forth between two stable visual fields.

The chains were colored, but the colors were not typically psychedelic in this instance, rather they were more monotone: subtle shades and hues of varieties of reds, yellows, and oranges. What I remember most vividly though about this particular experience was that I tried incessantly to focus on the chain links but could not. When I seemed to perceive a chain, and then tried to focus on a link, what I ended up seeing were more and smaller chains within what I previously thought was a link. I went round and round with this before it dawned on me that each link was made up of smaller chains which were in turn made up of smaller chains, etc.. There were big chains too, filling the space around me. My entire visual field was the dynamic spinning of these chains within chains within chains. And it also left the definite impression of gears turning gears within gears turning gears, *ad infinitum* (thus the Alan Watts quote in the previous chapter is very meaningful to me). At a later time I had an absolutely identical hallucination of this character, colors and all, about four years later when I was in college. The fact that the experience was repeatable in this fashion suggests to me that different hallucinogenic compounds have different, but reproducible, psychotropic effects. This observation serves in part as the basis for the suggestion I put forth in the previous chapter regarding using these drugs as a controlled means of inducing clairvoyance.

I relate this particular story for a couple of reasons. First, it was one of my really powerful early experiences in terms of visual effects. Secondly, it illustrates a repeating theme in the drug induced side of my biological perceptions: that of seeing things within things within things. That is, this was one of my direct perceptions of the fractal nature of the hallucinogenic experience.

Also I should point out that, at the time of this particular experience I had no concept of what I was looking at. I knew nothing about biology, fractals or occultism. All I saw were these utterly amazing patterns that I could not even describe with words. To me it is no wonder that modern psychologists have not accurately portrayed this imagery (as illustrated by the errors in representation of

these images seen in Plate 4), given that they generally know nothing of fractals or occultism either. Years later, when I saw my first fractal I was utterly amazed and could not believe it, because it was the first thing I had ever encountered that was like my visual hallucinations. And, as I discuss below, it was about a year after discovering fractals that I found the second thing that was like these hallucinations; clairvoyant descriptions of the astral plane. Knowing this, it should be obvious to the reader why I am attempting to say the things I am in this book.

Now before I continue to relate my drug induced perceptions, I should point out that in my life I've gone through two distinct phases with my relation to hallucinogenic drugs. The first phase is characterized by the fact that I had absolutely no comprehension of what these drugs were doing to me or what my visual hallucinations meant. Then for perhaps two years during college I quit the drug altogether for reasons related to my personal maturation. The second phase began later in my college career when I began to realize that these drugs had startling scientific implications, in terms of understanding the processes and mechanisms operating within our consciousness. It was at this point that I began to very seriously experiment with these drugs and pay close attention to their effects upon me.

It was in this second phase that I had experiences I currently believe were drug induced perceptions of my own physiological processes. I believe the above described experiences were also my direct perceptions of physiological processes, but at that time I was not aware of this, and the experience I am to describe dwarfed the previous ones in both observational clarity and wealth of detailed information. As well, the following experience I believe is intimately related to the green "baby-pins" I saw as a child.

Again, a bit of background is in order. In my first phase with these drugs the lasting impact they had upon me was, as I stated briefly above, to excite my intellectual and philosophical curiosity to abnormal (at least in terms of our society's expectations of "normal" mental behavior) proportions (and this effect has never gone away, I'm even worse in this regard now than I have ever been). This is relevant because when I went away to college I became a voracious learning machine exposing myself to such strange and seemingly irrelevant topics as mathematical sociology, contemporary evolution theory, Thomas Kuhn, non-Euclidean geometry, the philosophy and sociology of science, fractal geometry and the new sciences of complexity, among other things, and this was aside from my actual curriculum in chemistry and biochemistry. My early psychoactive drug experiences had turned something on inside me, triggered a switch, created an almost insane need to know (note the word "almost"), a strange unyielding desire to understand. What it was I was to understand or what it was I was searching for I didn't know. The point is I simply absorbed anything and everything I thought was relevant. Eventually in this intellectual sojourn, I carried myself into territory that would be essentially considered occultism. It was, as a matter of fact, occultism. Science was no longer enough and whatever it was I needed, the occult had it at that point in my life.

I developed an equal intellectual voracity for occultism and eventually came across some Theosophical material that had the curious title of "Occult Chemistry" by Besant and Leadbeater. Initially cynical and skeptical, I was soon confused. For in this book, Besant and Leadbeater claimed to possess psychic powers that allowed them directly observe atoms. This ability, they explained, was one of the many siddhis or powers that one developed by practicing yoga. As I have already discussed Occult Chemistry I will only mention relevant details here.

Well, over a period of months, and after having unofficially dropped out of school to study subatomic physics and yoga, I realized that, in all fairness, the claims of these occultists were more likely

to be true than false. The relevant point I realized was that, whatever these people were doing via yoga that allowed them to see atoms was much too similar to what was occurring with my visual experiences induced by hallucinogenic drugs to be a coincidence.

At the same time, having read Leadbeater's *The Astral Plane*, I became interested in the notion of astral projection. As I learned more about this phenomena I realized that a few times some years before, I had actually had this experience, though at the time I did not know what it was. These early experiences happened to me twice and both were identical. I had laid down and fallen asleep, but then was suddenly awake and spinning around the ceiling of my room completely terrified! I remember that during the experience it was as if there were two of me, one who was terrified and one who wasn't, and this other me was very curious as to why I was so afraid. Both times were a battle between the curiosity and terror, with the terror finally winning and me waking up in my bed thinking, "God! That was a weird dream!" At any rate, as I became more familiar with occult literature, I realized that these early experiences were not dreams but were astral projections.

Not only did *The Astral Plane* stimulate me to begin astral projecting myself, but I also noticed that some of Leadbeater's descriptions of the astral plane were indistinguishable from my hallucinogenic experiences:

"...two remarkable characteristics of the astral world--first, that many of its inhabitants have a marvelous power of changing their forms with protean rapidity..."⁷

"Most brilliant and most easily seen of all, perhaps, though belonging to a more refined order of matter--the astral--is that part of the aura which expresses by its vivid and ever-changing flashes of color..."⁸

Here Leadbeater talks about vivid colors, and ever-changing forms, things I had seen under the influence of hallucinogens (see also Annie Besant's quote on page 62, and Leadbeater's quote on page 183 in this regard). So not only were the strange dreams I described above related to this occultism, but so were the hallucinogenic drug experiences.

So, out of our enthusiasm, a few friends and I began to undertake experiments, both with hallucinogenic drugs and with our dreams, to see if we could testify to the things we were reading about in these occult books. Again, I am not reporting my dream/sleep related experiences in this book, though these have produced a rich harvest of information about the dream world and inner planes.

One hallucinogenic drug experiment I performed with a friend was crucial in convincing me of the validity of occult claims. I shall now explain this experiment in detail. The purpose of our experiment was to take a hallucinogenic drug and see if we could make sense out of our hallucinations in terms of the occult ideas. There were two ideas that we were to consider: 1. When we hallucinated were we actually seeing the astral plane? and, 2. Did our hallucinations have anything to do with the psychic ability (micro-psi or anima) that Besant and Leadbeater used to see atoms?

What we did in the experiment was take the drug and sit in my room and simply observe the effects of the drug on ourselves. I do not know what compound we ingested, but I would guess we took about 200-300 micrograms.

I don't know if people realize it or not, but taking a hallucinogen is not at all like, say, getting drunk. When one drinks they lose control of their rational faculties. The exact opposite occurs on

hallucinogens as I've already stated. We were able to maintain a calm and rational disposition through the entire evening, though we observed many things that left us excited or shaken up emotionally. What I will do now is describe the course of the evening and what we observed, then isolate out all of the relevant features of our observations.

After the initial phase of the drug's effect passed (a sense of nausea that occurs within a half hour of ingestion and lasts maybe a half hour), we indeed began to hallucinate. Now, I should point out that throughout the evening we operated under an assumption that proved to be true, though at the time the behavior was quite automatic. That is, we both realized that we were seeing the same thing, or locking onto the same levels of perception as was the case. What this means will be clear shortly.

Now, I was sitting on my bed looking at my wall, which was an off-white color, and the first thing I noticed was that it was breathing. I went and touched the wall and realized that the breathing motion was in my perception because my hand could not feel the wall move. And it wasn't really a breathing motion when I sat and looked at it closely, it was more like a spinning motion, like the Möbius spinning motion I described above where it seemed to dovetail into itself.

Next I noticed the color and texture of the wall had changed. It had gone from an off-white to a neonish light green color and had taken on a "chalky" appearance or texture. That is, my entire visual field seemed to take on a "grainy" structure, as if everything I was seeing had been colored by chalk. And as well, I noticed that every so often a neonish purple splotch would well up out of nowhere then disappear again. I pointed out the change in the wall's color and texture and purple splotching to my friend. He had noticed the change in the wall's color and texture and it was apparently as obvious to him as it was to me. He didn't see the purple at first though. So we sat for some minutes staring at the wall trying to see the purple splotches appear and disappear. Soon we were both seeing them and they were appearing quite frequently now. We sat there trying to figure out what they were.

It was he who first noticed that what was really going on was that there appeared to be "pipes" and the chalky green color and purple splotches seemed to be liquids flowing through these pipes. I continued to stare at the purple splotches appearing on the wall and eventually saw that he was correct. But then I noticed that what was going on was that the chalky green color *was* the pipes and that the purple color was actually a liquid flowing through the green pipes. Upon staring further at the images, my friend agreed that this was indeed what we were seeing. And we sat there staring for some time at my wall which had turned into a network of green pipes, which appeared to us to be about one foot wide in our perception, with a purple liquid flowing through them. The green pipes were transparent, whereas the purple liquid was opaque. Both had a neonish texture to them (see Plate 12, frames A and B).

Then as I stared harder and harder at these pipes, I began to notice new details, and then it dawned on me what I was seeing: that any given pipe we happened to stare at was actually made up of many, many little pipes, thousands of them, it looked like. It was the same way that a rope is made up of many fibers. And he noticed it too after I had pointed it out to him.

And somehow this observation took us into a whole completely different level of perception. Because now, everything in our visual field, my bedroom and everything in it, was seen to be made up of these little green pipes with a purple liquid flowing through them. Now this is very difficult to put into words so bear with me. It was not that we couldn't see my room because we could. It was more like there were two definite levels of visual perception we could go back and forth between; one was my room and all the objects in my room (us included) and the other was this level of all this tubulature, these

little green transparent tubes with purple liquid flowing through them. It was as if all the things in our visual field were *defined* by these tubes. It was apparent from the shapes made by the green tubes and purple liquid that these were somehow responsible for the normal visual images of my room. The outlines between the objects of my normal visual perception (i.e. the edges defining a chair as a distinct object from the wall behind it, see Plate 12, frame A) were where the purple liquid flowed. If there was a colored surface with no contrasting images or edges in it, then it was just made up of these green tubes. And the green tubes weren't rope-like any more. The only thing I could think to make sense of what I was seeing was that it was like a super complex chemistry glassware setup. All these tubes connected amongst themselves in the most striking and complex patterns, but in a "perpendicular" kind of fashion (see Plate 12, frame C). Note here that I have only drawn a few of these pipes, we actually saw many more than are depicted here. Also note that I have made no attempt in Plate 12 to depict how the green tubes and purple liquid aligned with and outlined the normal objects in my visual field.

We started to observe a new affect now; our whole visual field seemed to breathe or pulse in a most peculiar way different in quality from the dove-tailing breathing motion I described above for my earlier experiences. I remember staring at the ceiling and seeing what looked like stalagmites, made up of these green tubes and purple liquid, grow, or fall, or melt, out of the ceiling, then disappear, then reform, and it was like a cycle. Or if I looked at an object (like the chair in my room), its contour was solid and defined for an instant and then would fade, and then become solid again, and again, it seemed like some kind of pulsing or cycle. The effect reminded me of waves on a beach; the wave splashes on the beach and makes an indentation in the sand at the moment of impact, then draws back only to splash again, and the pattern produced in the sand at the moment of impact fades away in the shape of the water as the water pulls back out (this metaphor is almost identical to the actual perception I am trying to describe).

We knew we were looking at something in our brain and we realized that our brain breathed, just like our hearts beat, and our lungs breathed. It seemed like an electromagnetic kind of breathing or cycle, as if a magnet was turned on for an instant, then turned off, then turned on, and so forth. The magnetic effect was as if our perception was drawn outside us, pulled out of us, as if magnetically by the environment. Our perception splashed onto a "something", a milieu that appeared to form into the normal elements of my visual field (i.e. my bedroom) upon impacting with this perceptual outpouring. As well, it seemed like we could "push" the perceptual outpouring as well. This pushing sensation was very reminiscent of the ability we have to control our breathing and hold our breath.

We called this cycle of our perception the "lock-mold" cycle and it went: lock-mold, fade, lock-mold, fade, lock-mold, fade. What this lock-mold cycle seemed to do was this: in the lock-mold phase the green tubes and purple liquid would seem to magnetically lock around the objects in my room that we were looking at, and they would literally define the contours and shapes of the objects in our visual field. Then, during the fade cycle everything seemed to relax and the tubes would start randomly moving around, breaking apart and forming connections with each other, and the purple liquid would flow as if it was something swimming. Then the magnetic lock-mold would occur again, aligning the tubes and purple liquid in the exact pattern of the "normal" objects in our visual field, and the cycle would repeat. The lock-mold phase seemed instantaneous, and the fade phase lasted longer. If I were to guess, the whole cycle seemed to take about a second (a 1 Hz cycle), and again, it mostly consisted of the fade phase.

In retrospect, it would have been smart to measure our pulses and see if the lock-mold cycle corresponded with our heart beat. We did not do this. However, it seems reasonable in retrospect to think that this lockmold cycle we observed was directly related to the pulsatile flow of blood pumped into our brain by the heart. The typical heartbeat is 60-70 beats per minute and this frequency approximates well the frequency of the lockmold cycle we observed.

Somewhere in the middle of all of this as the evening progressed, we observed another very dramatic phenomena as well. This we called the "holographic color field". We discovered this by trying to understand how the green tubes and purple liquid could produce the color of the objects in my room. What we discovered is that the green tubes and purple liquid did *not* produce the color of these objects. When we tried to see where the colors were coming from, we then discovered this new factor; the holographic color field.

There seemed to have been two main things going on with regard to the mechanisms of our visual perception. On one hand, there was the green tubes and purple liquid and the fact that these defined the objects in our visual field, but in a sense, the tubes and liquid gave a black and white (or more precisely, purple and green) view of things in our visual field. On the other hand, there was this holographic color field and it seemed to give color to the objects defined by the tubes and liquid. That is to say, the shapes and contours of the normal objects in my visual field seemed to be defined by a separate mechanism from the colors of these objects.

However, there was more to this field than just the fact that it gave color to the objects in our visual field. It seemed to have been a thing in itself, as if there was this super-kaleidoscopic, holographic color field cutting through and filling our perceptual space. It seemed to be its own space superimposed over the other perceptual spaces (thus, at this point we were seeing four perceptual spaces: 1. my room, 2. the level of the big tubes, 3. the level of the little tubes, and 4. the holographic color field.). This color field moved quite independently of the green tubes and purple liquid in a fashion I simply cannot describe in words, and it did not seem tied to the lock-mold cycle as were the tubes and liquid. It seemed like the color of the objects in our visual field (the things in my room) would force (by what seemed like polarization or magnetization) the part of the holographic color field that happened to be "over" the object to be the color of that object.

Otherwise, if for example we stared at my wall or ceiling which were white, this field was the most subtly beautiful array of colors I have ever seen. It was a fractal too, and it had a very electric quality about it. To sit and stare at the field when it was unaffected by the objects in my room was unbelievable. It was so incredibly beautiful. It was like looking out over a vast mountain range of a myriad incandescent colors, and the colors had the quality of color that one sees in a holograph, thus our name of "holographic color field". But it was not the simple monotone hues of a typical holograph. It possessed the most subtlest of hues, and the most delicate blending of a vast spectrum of electric neon-like colors that would shift and transform in a fashion I simply cannot describe. I remember trying to focus on it, to look for an edge to the thing, but I couldn't. Whenever I'd try to focus, it would just produce more mountainous detail, exactly the same effect found in "zooming" on a fractal image, and the colors would shift and slide from one enormously gorgeous color pattern to another. It was so subtle and beautiful I can't even begin to explain it.

At one point in the evening, one of my roommates came in and interrupted us, and joking around, he shut off the lights in my room. This had a most incredible effect on my perception. My entire

visual field became dominated by the holographic color field, and I had completely lost perception of the other levels. This bothered me and I immediately turned the lights back on.

If all of this isn't startling enough, the final clincher came as I was laying with my feet up against the wall looking up at the "stalagmites" forming and fading on the ceiling when I made the most startling discovery of them all. For orientation's sake, we were probably 3 hours or so into the drug experience. I was watching the fade cycle very carefully (which is when the stalagmites would seem to melt out of the ceiling, or, in terms of the wave/beach analogy, when the wave would wash back out to sea), and mind you the holographic color field is in the background of my vision though I'm not focusing on it. With all this going on in my vision, I noticed the most spectacular detail of them all. What I saw amazed me beyond my wildest expectations. The strangest emotions swept over me as I realized what I was looking at. A wave of emotion filled me that felt like the way a proud and loving pet owner feels towards his animal--but multiplied by a million-fold. For what I saw was that the purple liquid was not a liquid at all, but little purple bacteria-like creatures swimming around through the pipe structure. I was awe-struck!

I cried out to my buddy, "There's little bacteria swimming around in our brain!" Very quickly he saw it too and we were both marveled by this. Yet he wasn't as enthusiastic as I was about the little bacteria creatures for he found another perceptual level to lock onto as well that had captured his attention and interest. He "took" me there and I was kind of nauseated by what I saw because it was layer upon layer upon layer of what looked to me like muscle cells. A single "cell" was roughly diamond shaped and had a black dot in the center of the diamond. These things, that definitely looked like cells, were strung together forming planes or sheets, and the planes were layered one upon another. They had a peculiar vibrating motion about them that turned my stomach. As well, since they were fairly transparent, a strange effect was created by the way the layers were stacked that caused the sight to look like a bunch of strangely overlapping faces--human faces. The cells were a soft pinkish orange color and they were textured like velvet or flesh. They did not have the holographic texture of the color field, or the neonish texture of the pipes and bacteria creatures. They had a perceptual quality just like our normal vision. This level of perception made me uncomfortable, and I did not focus on it much. Besides, I was freaking out on the fact that little bacteria creatures were swimming in my head and I went and studied these creature intensely.

It was ironic that I saw these bacteria creatures because the previous quarter in school I had just taken a class in microbiology. In that class we looked under the microscope at bacteria many times. I immediately realized that what I was looking at right then on hallucinogenic drugs looked just like the bacteria that we saw under our microscopes. I could follow these little creatures in my vision easily. The first thing I noticed was that, during the lock phase of the lock-mold cycle, these little guys were literally locked into place, and again this locking was highly reminiscent of magnets. And it was they, the little bacteria creatures that defined the shape and contour of all the objects in our normal visual field.

I remember tracing out my "hallucination" of these creatures in the green pipes exactly as I saw it on my wall in pencil (that is, I drew on the wall of my bedroom, in pencil, the images I was seeing superimposed over the wall). Later I traced that drawing onto tracing paper and colored it in with magic markers. The picture is hanging on my wall now as I write, and it is reproduced in the color plates (Plate 11) so you can have an idea of what I'm talking about here. When looking at Plate 11, imagine having what you see there superimposed over your vision at any instant in such a way that the

purple creatures define all the contours of the objects you are looking at. Another way to understand this is imagine making a pencil drawing of the contents of your visual field. Wherever you would put a pencil marking is where the purple bacteria creatures in the tubes would be. All the unmarked space would be filled with the green tubes but they would be empty of the bacteria. Also, I should point out that the apparent shading effect of the coloring of this picture was not present in our "hallucinations". This was actually an effect inadvertently created by the magic markers I used to color this picture.

So I studied these little creatures and tried to pinpoint their behavior as best I could (see Plate 12 frames D and E). As I said above, during the lock part of the lock-mold cycle, they would literally lock into place and not move, though they would flutter and wobble a little bit (the same way that a person who is standing still wobbles back and forth slightly) as they were locked into place on what appeared to be the inside wall of the green tubes. Then, during the fade part of the cycle they would be free from the magnetic influence that held them in place and they would literally swim about like fishes through the tube structures. And they would swim about quite freely until the lock came again, and, wherever they happened to be, they would freeze in place, though like I said they weren't perfectly immobile. They'd be stuck in place, but they'd wag and wobble, almost as if they were nibbling on something. Then the lock would fade and they'd swim about again.

I could zoom in on these guys and look at them fairly closely. I could get it to where one of them looked like it was about an inch long in my visual field. They all had a very definite structure, and the structure was the same for every one I observed. They also had three distinct properties in their behavior.

First, their structure; I've drawn a picture of one in Plate 12, frame E. On average, they were shaped kind of like fish, and they were definitely three dimensional, that is, they had volume. They were surrounded by a darker purple-blue membrane which enclosed a lighter pinkish-purple medium. The light purple medium appeared to be smooth and homogeneous, I could discern no detail in it. The only thing I could see inside of these creatures was a dark particle in the center that I took for a nucleus. This nucleus was a darker kind of purple like the membrane, but it had a different texture. The membrane seemed sponge-like but the nucleus was homogeneous like the inner medium. When I say "homogeneous" I mean that I could discern no detail. So in scientific terms, their morphology was a membrane-bound, nucleated structure.

Now their behavior was fascinating. First, when they were locked in place on the inside wall of the green tubes, like I said, they still squirmed and wiggled. Second, the change in their global structure (that is, the entirety of all these creatures as they filled and defined my perceptual field) from lock to lock looked identical to the jerky motion of schools of fish. That is, their movement looked like the direct and abrupt movements seen when a school of fish makes a sudden change of direction. Third, during the fade part of the cycle, they were free moving and now, each little individual bacteria creature swam as if it was a fish. They even wiggled like fish when they were swimming free. They could swim in either direction relative to each other and they moved at many different speeds. Some just moseyed along and others were little speeding busy-bodies. When they were free swimming, it seemed as if each one was moving quite purposefully, like it had somewhere to go. Nothing about any of this seemed random. And fourth, any individual possessed the following behaviors:

1. It could elongate itself out laterally, with or without changing its width. That is, it could stretch its length. I would watch one occasionally increase its length and be surprised to see that it did not change its width.
2. It could elongate itself width-wise, that is, become fatter.
3. It could literally fuse with another one. At times I would see two of these creatures swim up and approach one another and then they would fuse together and one binucleated structure would swim away.

I call these things "meme-bacteria" as a tribute to Richard Dawkins and his concept of "memes". What I feel these meme-bacteria are in terms of known brain physiology and biochemistry I will discuss ahead, and their relationship to "memes" will be discussed in the next chapter.

Other things happened as well in our observations which were of an emotional character. Late into the evening a sense crept over me and my buddy that was something like what one feels when they're trespassing on someone else's property. It was as if we had been stepping on the flowers so to speak, or were stealing apples off of the farmer's apple tree, or like we littered in the forest or something. It's a hard feeling to describe.

As well we discovered a thing called a "spiral". Your spiral is your aura, but in a different sense. Your spiral is like the magnetic force that is *you* and it animates and holds together your physical body. The sensation is of a magnetic spiral current moving through one's body, but one *controls or creates* the movement itself. Spirals are something you can feel in your physical body. They cause you to walk the way you do, and make the kind of faces you make. Your spiral is the way your body wobbles when you're just standing there, the way you animate your voice and move your arms when you talk. Your spiral is kind of like your fingerprint, everyone's is unique. This spiral I believe was our direct perception of what occultists call "kundalini", and what Robert Monroe calls a "curl". Very often in literature that discusses kundalini, the kundalini is depicted as a spiral current running through the length of the body, with the spine as the long axis of the spiral. This is indeed what I felt that night. However, the sensation was much more complex than feeling something like a slinky flowing through me. Again, *I* was this spiral energy, it was not something distinct from me. Every motion I made flowed from this spiral sensation.

13.2 Causes and Explanations of Biological Perceptions

On the most basic level, I believe that the overall physiological effect of the hallucinogen we ingested was to increase the flow of the kundalini energy through our bodies, at least to the extent we were conscious of it as a distinct process in our being. I believe that somehow the drug increased the flow of this kundalini not only so that we could actually *feel* (in a kinesthetic sense) that this spiral magnetic current moves through and actually *is* our body/mind, but as well the enhanced kundalini stimulated our third eye chakras in such a way that we could now perceive nonphysical realities from the standpoint of our waking consciousness. This is my "bottom-line" explanation of why we saw the things we did that night. In other words, the hallucinogenic drug made us clairvoyant. In my opinion, this is the most straightforward explanation of what occurs when one ingests hallucinogenic drugs. This is why I claim that the mode of action of these drugs is to stimulate the chakras.

We learned very much the night that the above experience occurred, needless to say. We were both student scientists performing this experiment; myself with my biochemistry background and my buddy with his metallurgy background. As well, a third friend was present who had not done any drugs, but did witness our behavior and exclamations that night. My friend who had done this with me, even today knows how real what we saw and felt was. A week later, with the same drug, we repeated the experience. I have never been able to repeat these observations exactly when under the influence of hallucinogenic drugs, and I mainly attribute this to the drug. However, the various elements we observed such as the lock-mold cycle, the meme bacteria, the spiral and the holographic color field have always surfaced in some fashion in my subsequent experiences with hallucinogens. These elements are common motifs of my hallucinogenic experience, and can assume a variety of forms, which I would assume is a direct function of the drug ingested, its concentration, and as well, my physiological and psychological condition at the time of ingesting the drug. Again, the effects of hallucinogens are very complex and to expect simple correlations between different drug sessions is unrealistic. Nonetheless, the observations described above can be taken as variations on recurring themes.

An extremely interesting effect of these drug experiences is that my friend and I, and a third friend (not the third friend mentioned above) who has also had the same hallucinogenic perception, can all reproduce the effect, only at a much, much less intense level, when we are straight (i.e. not on any drugs at all). Any time, if I relax, let my vision blur and concentrate, I will see the chalky texture, green tubes, and the little meme-bacteria superimposed over my normal visual field, complete with neon colors. But the image is very faint and mostly blurry, and there is no perception whatsoever of either the lock-mold cycle or the holographic color field. Yet, it is as if we have since learned how to "go" to these perceptual levels from the initial drug induced experience. One obvious question I've asked myself is: why is the perception so very much less intense when I'm straight? What it seems to me is that, when not on the drug, my normal physical perception is too strong and it damps out my perception of these other levels that we learned to see under the influence of hallucinogens. And also, of course, the drug itself is triggering off some neurological mechanism that does not operate in me under normal conditions.

At this point I would like to discuss what it is I think I saw in terms of scientific ideas, and what happened to us in terms of occult ideas. Much of this has already been defined by simply describing the experience. It was interesting how we would actually *discover* the things we saw. It started out that we were initially looking at something that made no sense to us at all. It was almost like a puzzle. But it seemed that we stared at it so much and with such intent to figure out what we were looking at that new details would arise in our perception which we could then focus on and try to define with words and ideas. In this latter regard, my familiarity with microbiology, and biology in general was crucial. If I had not known the things I did about cell structure and body organization, much of what we had seen probably would have made no sense at all. Here now, we can see the paramount importance of the *significance* given to drug induced visual imagery. Yet, this issue of significance is not that clear cut, as I'll explain below. I have some definite ideas about what we saw in terms of science, but I'm not sure to what degree scientific terms are applicable to our drug induced biological perceptions.

Now, from an occult perspective, there is no question in my mind that one of the effects of the drug was to allow us to exercise the psychic ability which was also used by Besant and Leadbeater called "micro-psi" or anima, though we obviously did not have the degree of control over magnification that they did. I remember very definitely trying to focus and see deeper into a single meme-bacteria, but

I was unable to do so. Yet, in spite of this limitation, it was clear that the drug stimulated the flow of kundalini energy in our bodies and minds and this somehow triggered off the micro-psi ability in our perception. It is obvious that we were somehow visually locked onto different levels of spacial organization, on at least the physical plane. All the things we saw had a nested (i.e. fractal) organization; levels inside of levels inside of levels. The perceptual levels I could see, starting at the top level and nesting inwards, were (again, referring to Plate 12):

1. The normal physical level; that is, my room.
2. The level of the big green pipes with the purple liquid flowing through them.
3. The level of the diamond-shaped flesh colored cells that made me uncomfortable (of which nothing will be said other than that I saw them).
4. The level where I could see the meme-bacteria swimming through the complex maze of ever changing pipes.
5. The level where I could focus on one meme-bacteria.
6. And another level I didn't describe above but alluded to when I said the holographic color field looked like mountains. This sixth level was the opposite of the others in terms of scale in that it seemed huge. At times I could look at the holographic color field as if it was a vast vista that seemed to extent out for miles and miles, as if into and beyond outer space actually.

Some of the qualities of this "micro-psi" ability as we experienced it that evening were the following. Late in the evening, after we had pinpointed all of these levels, the sensation was that we could literally slide our perception (actually it was that we could *shrink or expand* our spirals) up and down these levels and go from one to another at will by simply focusing on it. It was very much a process of focusing. When we were concentrating on one level, all of the others would fade into the background. The effect was exactly like when you focus on an object in the foreground of your normal visual field and the background becomes blurry. And surprisingly to me that evening, I could even "slide" into a perceptual level in which I felt perfectly normal, as if I hadn't even taken the drug. This latter fact is of great importance because it indicates to me that our so-called "normal" perceptions of body sensation and movement, sensory input, emotion and mind are but a *subset* of all the possible states of perception we can assume in our physical body.

Now, both of us who had taken the drug had perfect control of our rational minds that evening, if not an enhanced control in terms of our ability to focus our thought and our ability to move quickly from one new insight to another. I know for sure that my thinking was essentially no different, if not better, than when I am straight. It was very easy to look at these images and think about what I was seeing. What was difficult though was talking. It was as if I had to go back to the level of my "normal" perception to talk. Talking would cause me to loosen my focus on whatever I was looking at, but I could easily go back after I had said something. Now, it's not as if every time I said something the hallucinations would disappear. Whenever I spoke, the hallucinations faded into the background of my vision. This fact that I would loosen focus on a given level of drug induced imagery is very interesting from a neurological point of view. This observation suggests that, whatever the underlying mechanism of these perceptions, they compete with the neural mechanisms that lead to speech. That is, the neural circuitry for speech and the neural circuitry that allows for these altered perceptions compete with one another, and are distinctly different neural pathways. This is a useful insight because it clearly eliminates

certain brain regions (those involved with speech) when we attempt to search for the brain regions involved with sensing these hallucinations.

The second point to mention about this "micro-psi" ability is that both my friend and I seemed to see the same thing. One could say that it was wishful thinking, or that we each influenced one another somehow to make each other believe we were seeing the same things. First off, there was no belief involved. There was no imagining involved. We were quite literally *seeing* things. We were literally perceiving visual images. Nobody was making anything up. The whole experience was very exploratory, we were trying to make sense out of images we had never seen before. Thus, the question is: how come we both saw the *same* things? For if we think of these images as simply hallucinations, then there is no good reason that my hallucinations should look like my friend's. I believe that we saw the same things because first, I believe we were looking at our physiological fine structure (as will be described below), and since my friend and I are both humans, and human bodies are generally the same, we were both looking at the same thing, though I was seeing inside my brain, and he was seeing inside of his brain. And second, I believe that we had set up some kind of very intense psychological resonance with each other. That is, one of us would lock onto a new perceptual frequency and he could literally "pull" the other one there. This effect I believe is just like when you're in a glum mood and a friend comes over in a great mood and pretty soon you're in a great mood too. It was unquestionably some type of psychological resonance. In Chapter 14 I will outline in general the type of psychological resonance at issue here.

There was a third quality to the use of this micro-psi that was quite fascinating and may suggest ideas about the actual mechanism of micro-psi. There was a definite sense of a visual *amplification* occurring. When I spoke of the stalagmites falling out of the ceiling, this was an effect, or manifestation, of this amplification process. It is a peculiar quality that is hard to put into words. The effect is as if a kind of bouncing back and forth, or feedback, is occurring in the visual field, resulting in the effect that the images seem to rise one out of the other. New images seem to arise *out of the center* of the previous image, and the previous image seems to fade away while the new image grows and takes its place in the visual field. The effect was almost like the way concentric rings ripple away from the point at which you drop a rock in the water, only backwards. That is, the rings seemed to circle in towards the center from the outside. This feedback seemed to be *the* mechanism that allowed our visual perception to leave its normal state and create a "magnification" effect.

I have experienced this sensation of a circular visual amplification on almost all of my drug-induced visual perceptions, and I have had similar perceptions of it in hypnogogic or lucid dream states. I have seen this "concentric ring effect" many times in the hypnogogic state, but in this case there is no other imagery associated with the perception. In the hypnogogic state what I see is the darkness behind my closed eyes rippling. I am being very literal here: the darkness behind my eyes moves, it ripples. In this darkness, I see what looks like a film running backwards of a rock dropped into the water, and the darkness itself is the rippling water (and of course, there is no rock). Thus, this effect is not unique to the hallucinogenic experience and points to the idea that this amplification effect is a more general property of our human psychology and is not exclusive to the hallucinogenic state.

For some reason, however, it is accompanied by other imagery in the hallucinogenic state, imagery that leads to micro-psi type observations. In lucid dreams in which I have been able to perceive many levels of resolution simultaneously, the transition from one level to the next is abrupt and very discreet, as if I bypass all the intermediate levels. In the hallucinogenic state it seems that one does

not bypass these levels, but passes through them in the transition from one stable level of visual perception to the next. Why this effect is particular to the drug induced perceptions is unknown to me. Yet, especially given the literally circular nature of the perceptions, it seems to me to be a direct perception of, or through, one of the chakras, in all likelihood the third eye (ajña) chakra. The sense of perception is definitely localized between the eyes, which would strongly implicate the ajña chakra. In the hallucinogenic experience, it is likely that all the chakras are involved. In the hypnogogic state, I might perhaps be getting a weak, but distinct perception of the ajña chakra. Again, even though chakras are implicated in this effect, I do not know why hallucinogenic drugs would lead to the perception of what seems to be intermediate levels of imagery.

13.2.1 A Neurological Mechanism For Micro Psi

At this point, I would like to put forth some plausible ideas as to the underlying neurological mechanism behind the altered visual perceptions described above; ranging from the ideoretinal light I see all the time, to the hallucinogenic imagery, to at least a subset of the hypnogogic imagery.

First, it is clear that this visual amplification effect is central to whatever is occurring neurologically. Furthermore, that this effect is circular in its geometry and creates imagery similar to concentric ripples in water means that we are dealing with a phenomena controlled by periodic oscillations. In physics terms, the effect we are discussing here is referred to as *periodic amplification*. This means we have some kind of driving force (the "driving force" is the power or energy behind the event) which increases with time, and this driving force oscillates in a periodic way. In the simplest case, this periodicity can be mathematically represented by a sine wave whose amplitude increases with time.

Now, the two main questions arise: 1. what is the force responsible for this periodic amplification? and 2. What is it that is being amplified? For the moment let's focus on the second question.

We must keep in mind we are dealing with the phenomena of visual perception. The neural bases of visual perception are: 1. the neural pathways that conduct nerve impulses (nerve impulses are also called "action potentials") originating in the retina of the eye and traveling to the brain, and 2. the centers within the brain that integrate this visual input with other sensory input to create the coherent pictures of the world that we experience. Let's briefly review what is known about the neurophysiology of vision.

First, photons of light strike the retina of the eye. These photons interact with the rod and cone cells of the retina. The rods and cones convert the energy of the photon into the electrical energy of a nerve impulse. The nerve impulse originating in the rod or cone is filtered (or processed) by other cells in the retina and then leaves the eye via the optic nerve. Even before the nerve impulses leave the eye, they have been signal processed considerably (it is estimated that there is a factor of 20 reduction in the amount of information leaving the eye as impulses in the optic nerve. That is to say, for every 20 bits of information entering the eye, 1 bit enters the optic nerve⁹).

This processing of the nerve impulse signal continues as the signal travels throughout the visual pathway. Neurophysiologists have discovered that the nerve impulses leave the eye and travel down the optic nerve to a region at the back of the brain called the visual cortex. Here further processing occurs and the signal continues to travel to other regions of the brain. The signal converges with signals from

other sensory pathways in a brain region called the thalamus. The thalamus is the major routing station for information processing of signals that come from external senses and muscles. The impulse also travels to a region of the brain called the hippocampus (which is related to creating and storing memories) and is also integrated with other inputs to the brain (from other sense organs, from muscles and joints, etc.). The thalamus and hypothalamus (the hypothalamus routes our internal impressions such as body temperature, hunger, etc. to the cortex) are the major routing stations for sending sensory input to the frontal cortex. The frontal cortex is believed to be the major center related to thought, memory and creativity, i.e. the highest functions of human psychology recognized by scientists today.

So, in a nutshell, light rays get converted by the eye into nerve impulses. These nerve impulses travel through the various brain regions which serve to integrate the incoming visual information with information coming in from other senses. Finally, this integrated input creates in us the subjective impression of our perceptions of the world. By this point, the sensory input is at the level of the cerebral cortex, which subjectively means we are aware of the sensory input, and we are free to think about the information we have received, memorize it, ignore it, whatever we choose to do with it.

Now, given this (extremely simplified!) picture of how visual input reaches our awareness, can we ask just how this pathway of information flow may allow for us to perceive things like LSD induced hallucinations, ideoretinal light, or other seemingly anomalous visual perceptions. To do so we must turn to more recent findings by physiologists about the properties of information flow in neurons (i.e. the flow of action potentials through the nerve cells).

The key question about vision asked by neurophysiologists today is: what is the language spoken by the retina when it conveys a visual image to the brain? Again, the central idea here is that the eye is an organ that converts photons of light, or patterns of photons, into nerve impulses in the brain. Somehow, these nerve impulses created by the retina (and processed by the various regions of the brain) translate in the end as a visual image in our perception. That is to say, there must be some kind of *code* used by the eye and brain which converts the light the eye senses into the image we see in our perception. The deciphering of this code is one of the major themes in vision research today.

In the experimental quest to decipher this code, which has been partially decoded but by no means completely decoded, neurophysiologists have discovered that this code is not perfect. That is to say, when the eye communicates to the brain, there is *noise* present in the communication. Noise is like static and it garbles up the signal being communicated. For example, we all know what it means when we get static on the telephone line or on our TV set. The static interferes with the clear reception of our phone call or our TV picture. Such static is called "noise", and experiments on how the eye communicates with the brain have discovered that there is static, or noise, in the communication between the eye and the brain. This static, or noise, that exists in the communication between the eye and the brain is called "dark noise", and it is this dark noise which interests us.

More specifically, dark noise is that noise generated inside the eye and brain itself. In the words of one science writer, dark noise is "...noise not originating from the outside world of light but from the dark inner connections in the retina and brain"¹⁰: thus the term "*dark noise*". Two major sources of dark noise in the brain are: 1. the interconnections between nerve cells, and 2. the nature of light itself. In the first case, the interconnections between neurons, what is being referred to here is the fact that a nerve cell may spuriously conduct an action potential (nerve impulse) for no apparent reason at all, or also, it may fail to conduct a nerve impulse. Such spurious behavior on the part of the neuron will serve to erode the sensory signals traveling through the neuron and result in noise. In the second case, the

nature of light itself, light consists of photons and it is these photons that strike the rod and cone cells in the retina of the eye. Under conditions of sparse illumination (i.e. in a darkened room) the photons do not evenly illuminate the surface of the retina, and this uneven illumination presumably causes an uneven signal of nerve impulses in the retina. Though the nerve cells of the eye have means to compensate somewhat for this unevenness, it is still presumed to be a source of noise in the visual input. In a very bright setting, this photon effect is not as noticeable.

So, it is important to realize that the eye communicates with the brain via some type of coding of nerve impulses. This code is subject to noise, dark noise. It is quite obvious that, in our normal vision, we rarely ever see static. Thus, to the neurophysiologist, the mystery is: how does the brain correct for the dark noise so that we see a perfectly clear image of the world? At present, there is no answer to this question.

However, the presence of dark noise in our internal neural circuits has a great bearing on other questions we asked above. Remember, we have reviewed what is known about information processing in the visual pathways and asked: is there something in these pathways that could allow for the perception of hypnogogic, ideoretinal and LSD induced imagery? And prior to this in the discussion it was established that a key feature of these so-called "hallucinations" is the circular, periodic amplification present in at least a subclass of these so-called hallucinations, and we asked: just what is it that is being amplified? We will now put forth a possible answer to these questions.

Though we do not know the exact coding scheme between the eye and the brain, we know that dark noise is inherent in this pathway. I will now suggest that it is this phenomena of dark noise that is, in part at least, responsible for the so-called visual hallucinations we are discussing in this chapter: ideoretinal light, hypnogogic images and LSD induced images. This is a key feature of the visual pathways that can be invoked as the underlying brain mechanism which allows for the perception of such imagery. And as to the question of "what is being amplified?" The answer here is that the dark noise impulses set up a reverberation amongst themselves. In other words, *circuits* of dark noise impulses can be generated in the brain. It is these circuits that are being amplified. Shortly, we will address the question of what force may be responsible for amplifying these circuits of dark noise impulses in the brain.

At this point however, we have now defined a means *by which it is possible to perceive something for which there is no corresponding sensory stimuli*. The existence of dark noise circuits in the visual pathways would lead us to perceive things visually that were not sensed by our eyes. That is, the existence of circuits of dark noise in the brain will lead to *nonsensory* perceptions.

Now, before going deeper into this, I want to make very clear that this phenomena of dark noise presents a mystery to neurophysiologists because the question is: how can we get a clear picture of what the eye senses when it is clearly established experimentally that dark noise exists? Obviously, there must be some set of mechanisms in the brain that, under normal conditions, eliminates the dark noise and allows us to see a very clear image of the world. However, for the purpose of understanding the nature of the biological perceptions described in this chapter, we are evoking dark noise as part of the mechanism responsible for these images. The biological perceptions described in this chapter all occur under conditions different from normal, all that is, but the ideoretinal light. The perceptions described above (of the green tubes and meme bacteria) were induced by LSD, and hypnogogic images occur at the border of falling asleep. Only the ideoretinal light occurs under normal conditions. Thus,

whatever the mechanism in the brain that is responsible for correcting the dark noise out of our visual perceptions, then this mechanism is altered by both sleep and LSD.

This last statement gives us the opportunity to return to our question above: what is the force responsible for the periodic amplification of dark noise circuits? I can say with no certainty or specificity what this force is. What I can say about this force is that it is probably related to the same mechanism in the brain that normally eliminates noise from our perceptions. We can call this the "anti-noise mechanism" for convenience. Whatever this anti-noise mechanism is, it also *prevents* the periodic amplification of dark noise circuits. We can state unequivocally that, whatever this anti-noise mechanism is, it is *decreased* by both sleep and LSD. Most likely, this anti-noise mechanism is actually the inhibitory action of higher brain regions on lower brain regions. It is known, for example, that higher regions of the brain will suppress nerve activity in the spinal chord. Thus, it also seems reasonable to presume that higher brain regions can suppress the activity of spurious signals (noise) at the sensory input stations, such as the eye.

In the simplest case, the anti-noise mechanism is analogous to a filter which filters out the noise in the brain. Sleep and LSD cause the weakening of this filtering process, allowing for the generation of dark noise circuits in the brain. And again, these dark noise circuits will amplify upon themselves, with the ultimate result that one will perceive things that have no sensory counterpart. These self-sustaining dark noise circuits in the brain may be, in part, the mechanism of dreams, or at least the means by which our dream experience is captured as a memory in our brain. Concerning LSD "hallucinations", perhaps the LSD triggers latent properties of the nerve tissue, properties that are not usually expressed but, when they are expressed, make us more sensitive to allowing dark noise circuits to form in the brain (in effect, creating clairvoyance). This would account for the major differences between sleep and drug induced imagery. Whatever the specifics may be, I feel this is all that reasonably can be said, in light of present knowledge, regarding the question: what is the force responsible for amplifying dark noise circuits?

At this point, let us turn our attention to the subjective perceptions created by dark noise circuits in the brain. Again, these are perceptions with no sensory counterpart. We are perceiving things that did not come in through the senses. Thus, we can call these *nonsensory perceptions*. In the case of ideoretinal light, one sees myriad pinpoints of light superimposed over one's normal vision. In the case of hallucinogenic drugs, one perceives multiple levels of highly complex imagery superimposed over one's normal vision. In the hypnogogic state, one's eyes are usually closed, so the imagery occurs in the darkness behind our closed eyes. In all cases however, we are dealing with nonsensory perceptions; we are perceiving things that did not come into our awareness through our senses. The question we want to ask is: is there any rhyme or reason behind the subjective appearance of these perceptions?

What is the basis of these nonsensory patterns? I will venture the following answer: *the imagery created in our perception by the existence of amplified dark noise circuits in the brain is internal structure of the brain tissue itself*. Reverberating dark noise circuits build up, or amplify (because the anti-noise mechanism weakens), and the patterns created in our subjective perception are the very patterns of our brain tissue itself. This appears to be the case with LSD induced imagery. It is also probably the basis of ideoretinal light. However, this type of explanation can only account for a subset of the imagery perceived in hypnagogia and dreams.

Given this idea, let me return to the statement by Mavromatis presented at the beginning of this chapter:

"...a `direct awareness of the processes which physicists and biochemists and neurologists measure', that is, cellular and electron activities which may collectively (in groups) correspond to psychological processes. However extreme in scope and speculative this idea might seem *prima facie*, it might not sound all that unlikely when seen in its proper perspective."

And again, let us review the quote by Alan Watts:

"Closed-eyed fantasies in this world (of one's hallucinations) seem sometimes to be revelations of the secret workings of the brain, of the associative and patterning processes, the ordering systems which carry out all our sensing and thinking."

Basically, on the basis of all I've said above, both of these authors are right on the mark. Hallucinogenic induced imagery, and at least a subset of hypnogogic and dream imagery, as well as the ideoretinal light are "a direct awareness of the processes which physicists and biochemists and neurologists measure", are "...revelations of the secret workings of the brain...". If you think about it, this is the most reasonable conclusion to reach. For it seems quite unreasonable to just assume that there is no logic behind such "hallucinations". And to postulate any other explanation for these images would require an even more complex explanation than is laid out here. Thus, until further information is available or until the ideas presented above can clearly be shown to be false, then we have hit upon the simplest, and most likely explanation of the perceptions described in this chapter.

So, let's summarize what has been said to this point. We began with a discussion of vision. The idea that the visual pathways are subject to internal noise, dark noise, was presented. We postulated that some mechanism, an anti-noise mechanism, is responsible for suppressing this noise in our regular perception of visual stimuli. We next evoked this dark noise as a basis for nonsensory perceptions such as ideoretinal light, hallucinogenic drug imagery and some subset of hypnogogic imagery. We have said that, upon decreasing our postulated anti-noise mechanism, that dark noise forms circuits of impulses in the brain. These dark noise circuits then lead to nonsensory perceptions. Finally we have said that these nonsensory perceptions (especially those induced by LSD) are actually direct perceptions of the structure of the tissue of the brain. Let us now focus more on this last point.

Dark noise induced, nonsensory perceptions are direct perceptions of the structure of the brain. As a simple metaphor, imagine that we have water coursing through pipes. Obviously, the shape assumed by the water will be the shape of the pipes that contain the water. I suspect we are dealing with a similar situation with nonsensory perceptions. Dark noise circuits are circuits of nerve impulses reverberating through the brain tissue, but these circuits have no basis in any sensory input. Thus, the question is: what "shape" will these circuits take? Well, like the water in the pipe, these circuits will take the "shape" of the vessel through which they are flowing, which is the brain tissue itself. So then, we are left with dark noise circuits making patterns in the brain in the very shape of the brain itself. These circuits are then intercepted by the higher, interpretive regions of the brain and decoded by whatever mechanism decodes nerve impulses into perceptions, and the result is that we perceive directly the shape of the brain at some level. Below I will go into detail attempting to find a correspondence between the drug induced imagery I described above and what is currently known about brain tissue structure.

We can carry this model further and postulate that it exists for all the senses. That is to say, it is conceivable that dark noise circuits could be generated in the audio portions of the brain leading to "hallucinations" of sound, or in the touch regions leading to "hallucinations" of touch. Thus we could have modalities in the brain that can create "hallucinations" that correspond to every sense organ in the body: the five special senses (sight, sound, touch, taste and smell), the kinesthetic senses (our senses of movement and position), our senses of balance and temperature, etc. We could conceive of these nonsensory modalities as *harmonics* over the normal sensory modalities. Such a view brings us very close to developing a concrete understanding of many types of occult perceptions and altered states of consciousness.

What is interesting about this hypothesis is that these internal dark noise circuits create the distinct impression of light and color in the case of visual "hallucinations", or sound in the case of audio "hallucinations, but yet, there is no corresponding sensory stimuli. This would indicate that the qualities of light, color, sound, etc. are independent of the external physical world and that these qualities are somehow dependent upon the structure of the brain or, more likely, upon deeper occult (i.e. nonphysical) mechanisms. Also, however, the nature of the colors and light are *different* than color and light perceived in the physical world. We have already discussed that clairvoyants report that colors perceived on the astral or other planes have a different quality than physical colors. Usually such colors are described as "lighter" (less heavy) than physical colors. I clearly state above that my own drug induced imagery had either a neon-like or holographic texture. But even these terms are metaphorical at best. The nature of the imagery is simply different than simple sensory perceptions of light and color.

Generally speaking, postulating the above mechanism to explain at least a certain subset of images perceived in altered states of consciousness raises the question: do these mechanisms *cause* the images? To me, the answer is uncertain. It is apparent that the range of perceptions in altered states of consciousness is very broad. I want to stress that the above mechanism in all likelihood describes only a subset of altered states of consciousness such as those mentioned above: LSD imagery, ideoretinal light, and a subset of dream and hypnogogic images. Thus, the mechanism described above applies only in these specific cases. Furthermore, regarding LSD imagery, this postulated dark noise amplification can account for nonsensory perceptions, but there are other aspects of the LSD experience that cannot be explained by this mechanism (such as LSD induced mystical experiences).

The ultimate resolution to this issue has to do with the question: what is the function of the brain and how is our conscious awareness related to the function of the brain? Basically, one can state two broad answers to this question. The first possibility is that the brain *creates* completely our conscious awareness, including all altered states of consciousness. This is the attitude of the materialist, and is by far the predominant attitude of scientists today. This attitude assumes that all human experience and awareness can be reduced to an understanding of how the brain functions. Obviously, the implication of this view is that without a brain (and body to support the brain) there is no consciousness. Thus, there is no life after death, and all perceptions of the planes of Nature are but illusions created by the brain. The second viewpoint about the relationship between the brain and consciousness is that the brain is a *channel* which allows our consciousness to interact with the physical world. In this view, the brain and body are the vehicles by which human consciousness interacts with the physical world. This is, of course, the occult viewpoint, and as such, implies the entire occult world-view of the existence of the planes of Nature, the subtle bodies, etc.. These two viewpoints are both equally plausible, and they are mutually exclusive.

This second viewpoint is obviously the viewpoint I adhere to throughout this book. In my opinion, the range of human experience is simply too broad to be accounted for solely by the action of the brain. Thus, my underlying intent to show that there is a neurological basis for certain classes of altered states of perception is not meant to imply that the brain is responsible for *all* altered states of consciousness. By defining nonsensory perceptions as I have above, in terms of the existence of dark noise circuits in the brain, I am attempting to open a doorway that bridges the gap between physical and nonphysical perceptions. So, for example, when we dream, we are literally in the astral plane. However, when we remember our dream in the morning, there must have been some mechanism in the brain that transferred the memory of the dream into the brain. Perhaps the stamping of the memory of the dream into the physical brain involves a mechanism such as the dark noise circuits discussed above. I am presuming that this mechanism does not *cause* the images, but instead opens the physical brain up to subtle, nonphysical stimuli, perhaps even interfacing the brain with the nonphysical planes. I am attempting here to suggest mechanisms that tie together normal and altered states of consciousness; to define *physiological mechanisms* that can explain the phenomena of sensory independent perceptions, or at least a class of them, without necessarily implicating biochemical or cellular phenomena. However, when all is said and done, there will be cellular and biochemical correlates to the physiological mechanisms discussed above.

Thus to conclude this subsection, I would like to make the following statements. First, micro-psi is a relatively common event. It occurs when under the influence of hallucinogenic drugs, and during hypnogogia. It is not an exclusive "super power" of adepts and Masters. In all likelihood micro-psi is a physiological function of the brain. The actual physiological basis of micro-psi mostly likely involves the mechanism discussed above: the amplification of dark noise circuits amongst neurons in the brain. There are probably many factors causing the content of the images that result from micro-psi, and the one discussed above, that of the dark noise circuits reverberating in the "shape" of the brain tissue, is probably only one cause among many. What the line of thought I am pursuing here suggests is that there are latent functions in the brain, such as micro-psi, and these latent psychological/physiological functions serve to connect our sensory perceptions of the physical world with our nonsensory perceptions of the nonphysical worlds (such as dreams or hypnogogia). By pursuing these seemingly anomalous states of consciousness in a scientific context, as I am doing here, we are assuredly guaranteed in the long run of recognizing that many of the occult and yogic teachings are not myths or superstitions, but are very real events having a very real basis in the experience of human beings. Eventually, the sciences of human physiology and psychology will be united with the kundalini yoga.

13.2.2 Correlating the Content of the Hallucinations with Known Science

Now, let us return to analyzing my and my friend's actual experience described above. What do I think we saw that night? What were these little swimming creatures and these green neon transparent tubes and the other images we perceived? Well, there are two aspects to answering this question: the things I'm sure of and the things I'm uncertain about.

Let me first explain the things that were clear cut. One is that, if it's true that what I saw was in my brain, then we literally have an ecosystem inside our head. That was my definite sense of these creatures; they were a community, an ecosystem. Their motion on the whole was very much identical to the motion you see when looking at a school of fish, or even a crowd of people in a mall. The following

day we were at our school union (shaken up and exhausted, drinking coffee and trying to figure out what had happened to us, and still able to see the hallucinations fairly well) and we were really surprised by how much the way that a person moved when they walked, and the way a crowd of people moving resembled the motion of the meme-bacteria.

Looking at these group motions in conjunction with the lock-mold cycle led me to coin the phrase "psychomagnetic force". The meme-bacteria, the crowd of people in our union, a school of fish, a flock of birds, all share the same peculiar kind of behavior. And the behavior is that of a group of individuals *polarized* in some type of *behavioral* direction. It is very clear to me that this behavior is the action of this psychomagnetic force on a group of individuals. I also remember calling this the "astral wind" during our experiment. I think this is the exact same thing that Anton Mesmer called "animal magnetism". This is a very definite and real thing with all creatures, including humans. It is because of this force that everybody cheers at the same time at a sports event, or everybody laughs at the same time when a comedian makes a joke, or why everybody claps at the same time after a performance. Another place where one can really see the psychomagnetic force very plainly in operation is when driving on the road. There is a field-wide type of psychological, as well as magnetic, force that polarizes everyone in the group into the same behavioral pattern. Of course, you do not have to cheer, or clap, or whatever, but that does not mean this force is not real. In that case it means simply that you have had to exert will power to go against the tug of this force-field. Had you not exerted this will then you'd be laughing with the rest of the crowd. I will discuss this force more in the next chapter.

So, from the evening's experience, I am certain that there is a thing called a psychomagnetic force and I am certain that an ecosystem of creatures exists somewhere and at some level within our brains. As well, I am certain that our brain breathes. There is no question in my mind concerning the validity of the lock-mold cycle. Possible reasons as to why we do not perceive this effect in our normal waking consciousness are: 1. we somehow naturally damp out the sensation of it (what is called "habituation" in psychology) or 2. it goes so fast in our normal perception that we are unaware of it. This second possibility is identical to the way in which motion pictures work, the frames go by faster than we can perceive, so it creates the illusion of continuous motion. It's still not clear to me why we don't perceive the lock-mold cycle, but there are times in our normal life when you can perceive it to a small extent. One is when you are very, very tired and there is kind of a pulsing sensation in your vision. And the other is when, after sitting for a long time, you get up quickly and experience a "head rush" and one experiences that peculiar type of shaking or rocking sensation. Both of these instances are reminiscent of the lock-mold cycle that we perceived that night. As well, both of these examples are understood in terms of modern physiology and the effects have to do with blood flow in the brain, so I think there is a very definite connection between the heart's beating and the brain's breathing.

There is one precedent for the lock-mold cycle in modern physiology and this is the brain wave patterns measured by electroencephalopathy, or EEG patterns as they are called. Brain waves are the measurement of the electrical activity of the brain as it can be measured through the skull, and this measured activity is on the order of fractions of a millivolt (a millivolt being 1/1000 volts). These brain wave patterns are designated by Greek letters such as "alpha" or "beta" waves. The different types of brain waves have different frequencies. That is, brain waves measure the cyclic electrical activity of the brain. Such measurements show different regions of the brain displaying different electrical frequencies at the same time, and indicate that many different cyclic types of electrical activities are occurring in these different brain regions. Yet the lock-mold cycle that we perceived was *coordinated*, that is, it

unified the contents of our perception. Perhaps the lock-mold cycle we observed is the *sum* of the brain wave patterns measured by EEG. I am sure that there is a definite connection here.

I think it's pertinent to ask: What is this lock-mold cycle? What is its physiological function? I believe it is *the* global brain-wide electromagnetic organizing principle that gives rise to (or is a result of) the gestalt nature of our physical perceptions. Traditional EEG measurements have lead to a view of brain activity in which many separate centers are simultaneously operating. Yet modern interpretations of EEG measurements using chaos theory indicate that there are subtle forms of coordination between the different regions of the brain¹¹. It is very likely that all the separate regions of the brain are electrically coordinated, and I am sure that this lock-mold cycle is the coordinating medium. It is the thing that unifies our various sensory inputs and internal impressions into one unified whole; our moment by moment perception. What this implies is an absolutely coordinated type of electrical behavior of all of the tissue types found in the brain and central nervous system. It is possible that the origin of this electromagnetic pulsing, the timer or the clock, is located in the glands in the brain. It is known that the pineal gland plays a crucial role in regulating the internal biological clocks of the physical body¹², and this gland may also play a crucial role in the coordinated electrical activity of the brain. That hallucinogenic drugs can alter the normal operation of this cycle points to biochemical clues that may allow the localization of this function. However, this might not be true if the alterations in this cycle are a secondary effect. At any rate, that this pulsing exists and serves as a coordinating force for our perception is definitely true.

One final comment about the lock-mold cycle. Our experience that evening was that our perception was definitely discreet at its roots, and we could see that it was the nature of the fade phase of the cycle that created the illusion of continuous movement in our perception. That is, our perception that evening had a "frame-by-frame" quality about it. Thus, our perception is discreet, just the same way that we conceive matter to be in quantum physics. This is just one more observation that shows that quantum processes occur at the macroscopic level.

Now, what are the meme-bacteria and what are the tubes they swim through? I'm sure they are real, but I don't know to what level of organization of the brain they belong. Are they at the tissue level, the cellular level or the subcellular level? The following is some of my present *speculation* on this issue and I have come up with these based on other biological perceptions that I have had at other times, as well as on my knowledge of biological organization as it is scientifically understood at present. The following discussion will be fairly technical. However, it is meant to illustrate that drug-induced micro-psi produces scientifically relevant information, though it will also illustrate some of the fundamental differences between micro-psi observations and contemporary scientific methods of observation. Again, we will see how important the issue of significance is with regard to perceptions in altered states of consciousness.

It could be that the initial perception of a purple liquid flowing through green tubes (Plate 12, frame B) was a direct perception of blood flowing somewhere in my brain. This would implicate the green tubes as veins or arteries. The perception of the very complex network of smaller green tubes (Plate 12, frame C) may then be capillaries, and the little meme-bacteria may be some animated form of blood that is not recognized by modern science. But I don't know if I believe this. For one, why would little swimming pieces of blood be membrane bound and have a nucleus? Mature red blood cells are known *not* to have a nucleus. Secondly, at the level of the complex network of smaller green tubes, they were seen to form patterns of connections that would break apart during every fade phase and re-

assemble during the lock phase. Why would capillaries do this? I do not believe that there is any evidence that capillaries have such a labile ("labile" means that they form and break apart easily) structure.

My initial interpretation of the complex little green tubes that shifted and changed so much was that they are intercellular microtubules. Microtubules, as I briefly mentioned in the previous chapter, are filament-like, subcellular proteins that are an integral component of a cell's cytoskeleton. Microtubules serve a variety of important roles in a cell including the transport of substances throughout the cell, intercellular signal transduction, and as well play an important role in cell division¹³.

The idea that the green tubes we saw were microtubules has a lot of merit. First, microtubules are very labile *in vivo* (that means they form and break apart easily in living tissue). Second, an article in *Scientific American* about light microscopy studies of microtubules describes objects observed on the microtubules that moved in a manner that resembled schools of fish. To quote from this article:

"...we made the first recordings of particle transport in the squid giant axon. We could identify most of the particles by size. The large, elongated mitochondria...multivesicular bodies carrying surplus membrane. The smallest, least visible particles moved continuously in masses, like dense schools of fish, towards the synaptic terminal--the axon's end. These were precursors of the synaptic vesicles, transporting transmitter substances for release when the nerve cell was stimulated."¹⁴

This description is uncanny! The motion of these presynaptic vesicles sounds practically identical to my observations of the fish-like motion of the meme-bacteria. Based on the description in this article and along with my sense of what I was seeing that night, it seems logical to assign the little green tubes to microtubules, and the meme-bacteria to presynaptic vesicles. However, in this quote, the author is observing the motion of the presynaptic vesicles to be unidirectional, towards the end of the axon. The motion we observed in the meme bacteria was bidirectional, and their velocities were highly variable. So if we accept that the meme bacteria are indeed presynaptic vesicles, then the difference between the motion we observed and what is observed with microscopy could be due to either; 1. the effect of the drug on our physiology, and/or 2. the fact that microscopic observations of presynaptic vesicle motion are artifacts due to having isolated the neuron from its natural environment.

But if I make this assignment, then many questions arise. If the little green tubes were microtubules, which are *inside* of cells, why didn't I see other intercellular components such as mitochondria or nuclei? Also, even more importantly, these tubes filled my vision, and there was nothing that resembled them being separated by cell membranes. I simply can't believe that what I was looking at was inside of only one cell. Furthermore, presynaptic vesicles ride along the microtubule surface. The meme bacteria were most definitely inside of the green labile tubes. Thus, this assignment seems too inconsistent with known intercellular structure.

There is, however, a third possibility that is the most likely candidate for a scientific explanation of what we saw that night. This is that the little green tubes were axon terminal branches, and what we were observing was the making and breaking of synaptic junctions on the surface of dendrites. Dendrites are the smaller branching structures seen on nerve cells, as opposed to axons which are usually much longer. Dendrites are the receivers of electrical signals from the axons (many axons simultaneously), and the axons are the senders of electrical signals amongst adjoining neurons. There is

between the dendrite of one nerve cell, and the axon of the second nerve cell, a space called the synaptic cleft. The electrical signal is transferred between two nerve cells by the release of a chemical substance, called a neurotransmitter, which serves to carry the electrical signal across this synaptic cleft (how this is effected is unimportant for this discussion). The axon end is also called the pre-synaptic region and the dendrite end is called the post-synaptic region.

It is established that synaptic junctions are relatively dynamic entities. That is, a synaptic junction is not fixed or permanent, they can change location on a neuron's surface (be it the dendrite or the cell body). Such concepts arise mainly from studies of experimentally induced pathological changes in neuron populations (such as cutting, crushing, or over stimulating the nerve tissue with electricity). This leads to the destruction of neurons, and the subsequent regrowth of synaptic junctions in adjacent, undamaged regions. However, the turn-over time of synapses in these cases is on the order of hours, and in some cases, days¹⁵. It is then inferred that such processes occur naturally, though there is also good evidence to back up the natural (*in vivo*) turn-over of synapses (see note 15). This particular concept of synaptic turn-over is defined in terms of the disintegration and regeneration of the presynaptic elements. However, the author in note 14 states, "Synapses may also turn over by disconnection and not by degeneration; this makes their identification even more difficult."¹⁶

I would propose that what my friend and I observed as the transient breaking up and reforming of the little green tubes was indeed this process of the transient disconnection and reconnection of synaptic junctions. What this means is that, in essence, the synaptic junctions slide over the surface of the dendrites, and probably as well jump from dendrite to dendrite. I may have been looking at some particular tissue in the brain that is specialized for visual input and this may be the means by which visual images are recorded in the brain; by the transient forming and breaking up of synaptic junctions. The memory of such images would then be the willed reconstruction of such synaptic connections, thus reconstructing the image in the (most likely) cerebral cortex, and thus giving rise to the faint imagery we perceive in our "mind's eye" when remembering a visual image. This may also be, in part, the explanation of why electrical stimulation of certain brain regions can give rise to visual imagery

What this implies is that this process of synaptic disconnection/reconnection operates on a very large scale (at the cellular level that is, though not necessarily at the tissue level). And furthermore this process occurs on the time scale of seconds, or hundreds of milliseconds. We unfortunately did not time exactly how many lock-mold cycles occur in one minute, though it was definitely between 50 and 100. Thus, this process is highly transient and fast (in physiological terms), and it is unlikely that a neurophysiologist would observe it using their invasive methods. Furthermore, this process is most likely localized to the regions in the brain that coordinate and process sensory information, regions that are inaccessible to the physiologist except in pathological cases (such as accident victims who have lost regions of their brain, surgical cases etc.). I would localize this process to sensory processing regions of the brain because this dissociation of synapses coupled to the behavior of the meme bacteria *literally defined* our visual field. Thus, such an assignment of function is obvious.

How do I know that the approximately 1 Hz frequency observed for the lock-mold cycle was not the (perhaps drug induced) time rescaling of processes occurring at a different time-scale? I feel that this 1 Hz frequency reflected the actual physiology of the brain process we were observing because the patterns formed by the green tubes and meme bacteria corresponded to the real time succession of "normal" images (i.e. the normal physical level) in our visual field. In this regard, this mechanism of vision operates as well in our normal states of consciousness. For example, when you glance around

the room and observe the changing panorama of your visual field, this corresponds exactly and literally with the behavior of the green tubes and meme bacteria (and holographic color field, since what you are seeing is in color). If these green tubes are indeed the fine branchings of axon terminals, then our ability to form a succession of visual images in real time is due to the transient making and breaking of synaptic junctions at the ends of these axon terminals. This is a process basically unknown in the context of modern neurophysiology.

Also, though it is not clear to me why, I observed during our experiment that the peripheral vision plays a critical role in the succession of images that define the visual field. It seemed to play a primer role. The tubes and meme bacteria had no defined form in my peripheral vision, but as I would scan across the room, and the image in my visual field would change accordingly, it was apparent to me that the new images would cascade out of my peripheral vision. My peripheral vision seemed like hands in readiness waiting to grab the image in which ever direction I looked. It was as if my peripheral vision was magnetized in readiness, waiting to construct the image in which ever direction I looked.

But again the question comes up: If this is the case then what are the meme-bacteria? Again, they could be assigned as the presynaptic vesicles associated with synaptic junctions. If this was the case, which seems reasonable in that these meme-bacteria were seen swimming *in* the tubes (as opposed to riding along microtubules), then it would follow that the microtubules were not perceived by us.

Let me pursue this line of thought farther. If we indeed assign the meme bacteria to the role of presynaptic vesicles, then these did not behave as neurologists observe them to behave. The presynaptic vesicle is observed to be a membrane bound structure containing neurotransmitter substance. This vesicle then fuses with the pre-synaptic axon membrane and releases the neurotransmitter into the synaptic cleft. The meme bacteria did nothing like this. Even in the lock phase of the lock-mold cycle, the meme bacteria maintained their structure. They were simply locked in place wherever they happened to be within the green tubes (see Plate 11, this is exactly what it looked like at the moment of "lock" in the lock-mold cycle).

Yet, in spite of this inconsistency, it still seems reasonable to assign the meme-bacteria to be vesicles of some sort, whether these be synaptic vesicles or not. First off, they were obviously membrane bound, as any type of vesicle is. Secondly, that they could fuse with each other in the fashion they did further supports the view that they were membrane bound vesicles. This type of membrane fusion is a well established property of membrane bound structures (as found for example in phagocytosis or pinocytosis). Third, as I said, they swam within the tubes, much as vesicles are present within neuronal projections. Fourth, their swimming motion is too identical to the description in the above quote by R.A. Day to be a coincidence.

What this assignment implies is that vesicles of some type play a critical role in the pattern recognition processes of the brain that has not been recognized by modern neurophysiology. The main reason that this role for vesicles has not been recognized in pattern recognition processes is because it only occurs in intact, living tissue that is not pathological with respect to these specific pattern recognition functions. Or in other words, these are processes that simply cannot be observed by modern neurophysiological techniques. Using such techniques, one will only observe artifacts of these structures. It is unlikely that this model of visual perception described here could be inferred from such artifacts.

Furthermore, the main coordinating force of these pattern formation/recognition processes is purely nonphysical. It is the ego point (as described in chapter 10, section 10.2) that is responsible for these formations. When the ego point is broken (i.e. at physical death), this coordinating force is gone, and the meme bacteria revert to free-living organisms, and the tube structure (along with all other cellular structures) begin to disintegrate into free living forms as well¹⁷.

This is a extremely interesting model. This model gives the direct neuronal mechanism of visual perception. All that is needed is to localize this process at its appropriate level of brain tissue organization, and to determine the means by which the electrical signals generated in the retina and optic nerve lead to this type of transient pattern formation.

I could go on about this more, but it is apparent that these speculations are highly technical and that there is a high degree of uncertainty in this type of reasoning. It is possible that I could be completely wrong in these speculations.

A much more relevant question is; How do I even know that what I saw corresponds to anything known to science? Aside from the strong correlation between known microscopy structures and our observations as discussed above, I've seen other things in my biological perceptions at other times that look just like things described in physiology and biochemistry textbooks, as for example, my perceptions of nerve cells described above. Needless to say, I've been very surprised to see the correspondence between my biological perceptions and scientific descriptions. It is apparent to me that both means can lead to the same information.

However, as in the case with Occult Chemistry, there are a lot of disparities that are most likely effects due to the different methods of observation. For example, on one hand, most of what is known in science about the fine structure of nervous tissue comes from studies in which organisms are either killed or manipulated in some fashion that distinguishes them from their natural state. So an awful lot of science is *inference* about what may be going on in the natural state. In our observations, we were actually observing living, intact and functioning brains. This is a big difference and could lead easily to the inability to show a direct overlap between clairvoyant and scientific descriptions, as is made clear above. Also, it is not known what affect hallucinogenic drugs have on brain physiology and chemistry¹⁸. We may have, in large part, been observing effects that are highly specific to the hallucinogenic drug experience (yet I doubt this given how similar these experiences are on the whole to occult, non-drug induced clairvoyant perceptions). Also, on the other hand, it may have been that what we perceived was either perceived in a very limited fashion, that is, we weren't seeing everything that was going on, or the "visual frequencies" that we were perceiving on only allowed us to lock onto very specific levels that are functionally related in the actual operation of the brain, but are different levels of neural organization according to modern science.

13.2.3 The Holographic Color Field: Astral Plane/Color Language?

So we exercised micro-psi, but did we see the astral plane? Now the micro-psi issue was very clear cut. Like I said, there is no doubt that we used it that night, limited as it may have been compared to Besant and Leadbeater, and in spite of the fact that it was drug induced. I have used it at other times when under the effect of hallucinogenic drugs, but it has never been as clear as it was on this night. I can also exercise micro-psi to a much more limited extent when I'm falling off to sleep (in the hypnogogic state) or when astral projecting. There is no doubt in my mind that this ability is real. I've seen many

interesting things with this ability, some which I can describe and think I understand, and other things that make no sense to me. Now, the issue of what I see and how it relates to what is known by other means is very complicated and I'll return to this when I interpret what I think I saw that night in scientific terms.

Now did I see the astral plane that night on the drug? My answer to this is yes *and* no. According to what I've read about clairvoyant descriptions of the astral plane (mainly from Leadbeater), and seen there for myself in my projections, it's apparent that the astral plane is a pretty big place with an awful lot to see, and a large percentage of it (at least where I tend to end up) looks a lot like the physical world only with very subtle differences. I think that night I may have seen a portion of the astral plane as it projects or intersects with the physical plane. This is the holographic field that we identified. The colors and motion and behavior of this holographic field were very reminiscent of Besant and Leadbeater's descriptions from their writings about elementals, colors and such.

But also, I've been to the astral planes many times (like we all have when we dream--though I'm referring to my lucid experiences there) and I've never seen anything in my projections that looks like the holographic color field. I think in some sense or another, this holographic color field is related to the brain. It's either some physical or etheric part of the brain, or it is where the astral plane intersects with the brain. I believe this mainly because I have never seen it in my own astral projections. Also, we must remember that Leadbeater was presumably awake and conscious in his physical body when he exercised his clairvoyance, and he may have been seeing this level of the brain too when he described the ever-changing colors of the astral plane, that is, the astral elementals. I think this holographic color field is related to the "color language" that Annie Besant discusses. And also, somehow, this issue of the colors is related to the biochemistry of the brain, though at this point these ideas are only informed conjecture.

Still, I have often wondered if these colors one sees under the influence of hallucinogenic drugs are the colors of the elementals, and the color language spoken of by Besant and Leadbeater. And, if these are identical, then maybe perhaps what is really being perceived are the *chemical reactions taking place in the brain*, at least to some important extent. To me this is the most likely and most reasonable explanation of this phenomena when all of the evidence is sifted through. For as I discussed, quantum theory very successfully describes atoms as vibratory patterns, and who is to say that such patterns, if seen up close, would even look anything like the objects we are used to perceiving in our everyday experience? Atoms don't behave like everyday physical objects, so why should they look like them? Furthermore, the pictures of atoms derived from quantum theory found in text books (of s and d orbitals and of sp³ hybrid orbitals, etc.) are probably mostly artifacts of our need to relate our picture of atoms to shapes and object structures we are used to looking at and thinking about. To me it seems much more reasonable to think of atoms in terms of tones, and if these be "color tones", then that is fine too. One can imagine that these color tones, when interacting with one another via magnetic and electrical forces, would form the most marvelously beautiful polyphonic arrays of colors and textures. We know for a fact that the biochemistry of the body is extremely dynamic, cycles within cycles changing from moment to moment. So the color tones that are the atoms of our bodies would in reality form the most unbelievably beautiful, ever-shifting and ever-changing panorama of colors one could imagine. I really think this is what is going on to some important extent, both with regard to certain levels of drug induced perception, and the clairvoyantly perceived elemental color language of Besant and Leadbeater.

I do not think this "color tone" view of atomic structure contradicts either modern quantum theoretical views, or even the view of Occult Chemistry provided by Besant and Leadbeater. In terms of quantum mechanics, the electron probability density representations of atomic structure are valid only to the degree to which the assumption that Nature behaves in a probabilistic fashion is true. It is likely that this assumption is mainly a result of our present technology-based means of scrutinizing Nature, and I say this in spite of the Bell theorem.

In terms of Occult Chemistry, this color tone view does not contradict Besant and Leadbeater's observations, it is identical to their observations. Besant and Leadbeater never saw actual particles. Looking at the structure of the U.P.A. in Figure 2, section 6.2.4, it must be realized that this structure is not a particle. It is a flow pattern, a current. All Besant and Leadbeater observed were dynamic patterns¹⁹. As such, it seems more reasonable to conceptualize such dynamic patterns as polyphonic resonances, or polyphonic standing waves. In the end, in our view of matter, particles become an approximation of waves, special types of standing waves.

13.3 The Importance of Significance in Interpreting "Hallucinations"

The psychic events described in this chapter are very much like Occult Chemistry, though I think we have gone a little further in that we have shown that micro-psi is inducible by hallucinogenic drugs, and we have characterized the actual micro-psi experience a little more clearly than Besant and Leadbeater, in terms of the subjectivity of the experience and in terms of exploring the mechanisms behind this process.

Furthermore, this chapter emphasizes the issue of *significance* with regard to interpreting perceptions originating in altered states of consciousness. It is easy to be awed by these perceptions to the point of being entranced by their beauty or even mystified by their occurrence, and thus missing the significance of what one is perceiving in other terms (such as, in this case, neurophysiological terms). Someone with no background in modern biochemistry and neurophysiology would definitely not have interpreted the experience as I have here. As it is clear from the above discussion, neurophysiology is simply not common knowledge. Thus, in spite of reports (such as provided by Mavromatis, or even Leadbeater) of the relatively high frequency of such perceptions, usually in hypnogogic or drug-induced states, since there is no readily available language for interpreting these types of experiences, their significance is missed and lost.

Still, even in the search for a language by which to give significance to these experiences, the bottom line is that micro-psi observations, whether intentional, or inadvertent as most cases are, present mostly a confusing mystery. Even in the intentional case like Occult Chemistry and my own micro-psi observations, there are many facets of relevance to modern scientific ideas, but there are some glaring inconsistencies as well. Who is right? Is there a point of reconciliation between scientific and clairvoyant observations? Are both parties crazy? Modern science is an awful lot of inference, whereas clairvoyant observations are direct. But until the mechanisms underlying clairvoyant perceptions are well worked out it will be difficult to interpret them in terms of modern science. On the other hand, until the valid limits of scientific inference are defined and made clear²⁰, then we simply do not know whose description is more accurate, realistic and reasonable (though as note 18 explains, there is good reason to be wary of scientific inferences about microscopic biological structures). What's even worse is that

99.99% of the scientific world does not even accept the validity of clairvoyant observations to begin with! It seems like a hopeless case. All we can do is hope that it's not.

13.4 An Apology Of Sorts

To conclude this chapter, I would like to summarize what I have done in this and the previous chapter concerning the uses and implications of hallucinogenic drugs. These chapters were meant to illustrate the *clairvoyant properties of hallucinogenic drugs*, and to show how these drugs may be utilized in an occult context to produce meaningful and useful scientific information. In spite of the seemingly incredible claims laid out in this chapter, there is no question in my mind concerning the validity of these experiences. I have illustrated how there is considerably more to the hallucinogens than anybody has suspected, notwithstanding some occult authors. As I have said in the previous chapter, these drugs quite literally provide the empirical bridge between modern science and occultism. These drugs induce siddhis.

Now I want to make it perfectly clear that I am not simply advocating the arbitrary use of these drugs. What I am saying is that hallucinogenic drugs have very serious implications on many levels. The psychological effects they induce challenge our consensus notions of what is "real", and as well challenge the current scientific definitions of what is and is not "real". The role hallucinogens could and should play is a very sticky issue and I will not even pretend to have any definite answers.

However, we must overcome our arbitrary generalizations about mind-altering drugs, and our mostly arbitrary and hypocritical moral and social attitudes about drugs in general.

The man on the street trusts that the doctors have the situation well in hand, and that the doctors know what they are talking about with regards to the properties of drugs. This is simply not true. In reality, the case is that some drugs are understood, others simply are not (even the mechanism of action of aspirin is not clear). Doctors have a pragmatic mentality like engineers, and often they do not care *how* a thing works, only that it does work. In some medical procedures it is not even the case that a procedure works; it may not. Yet, to a doctor, it is better to do something than do to nothing at all (CPR is an example of this²¹). This is the mentality that doctors generally have with regard to the use of drugs. Psychiatrists will prescribe a poison like Xanax for supposedly psychologically disordered individuals, though this drug is highly addictive and can produce worse effects than if the drug was not given at all²². On the other hand, these same psychiatrists simply ignore the possibilities of hallucinogenic drugs because they are socially taboo, in spite of the fact that they have no well-documented ill side-effects, and have proven to be very therapeutic psychologically²³ (also see note 29 from chapter 12 in this regard). And as I have already stated, a poison like alcohol is legal in our culture, which says much for the collective wisdom (or actually the lack thereof) of our society, and of those who make the rules.

There is no doubt that some drugs, for example cocaine, are complete poisons. Yet the hallucinogenic drugs fit into no easy categories, and a complex dialogue will be necessary to really iron-out the implications of these drugs. It is truly necessary at this point to open a healthy and strong dialogue about these drugs, a dialogue that will include not only scientific, occult, religious and mystical terms, but ethical ones as well.

Interestingly, such a dialogue existed for a short time and subsided (see for example, Aaronson and Osmond, 1970). Why did it do this? I think it is because early researchers expected too much from these drugs. They are not a panacea. I am an experienced user of these drugs and one effect they have is that eventually the glamour of their effect wears off, and one simply no longer feels a need to do these drugs. Like anything else, once the experience is exhausted it becomes boring and we move on to the next thing.

Historically, I think what has happened with these drugs is that the initial optimism was taken in the wrong direction. Timothy Leary and Ken Kesey were running around as if they had found the ultimate key to the mystery of life in these drugs. These individuals preached the "turn on, tune in, and drop out" mentality that was, in many respects, an important counter-cultural event. The counter-cultural movement of the late 1960s was very necessary for overcoming the rigid and sterile life-style and mentality that had infected Western culture after World War II. However, after the counter-cultural effects had done their job, this unrealistic over-optimism burned itself out in the sober face of the rest of the world. The pendulum of history swung the other way and these drugs became illegal, as well as scientifically taboo.

And here we are thirty years later. Psychoactive research is not dead, it has only gone underground²⁴. Still, even in these underground circles of "designer-drug" mavens, no really serious intellectual attempts have been made to understand the implications of these drugs and their psychological effects. *What is necessary today is a serious intellectual attempt to absorb and integrate the implications of psychoactive drugs into legitimate learning.* As it stands today in the legitimate sectors of our society, this has not happened. Psychiatrists and doctors are simply in no position to effect this change, for they have been conditioned into a reductionistic and spiritually ignorant mind-set. They are, in general, the vivisectionists who know nothing of mystical or occult realities. Of course there are exceptions to this in the medical community (for example see Dossey, 1989). Yet, I think the necessary impetus will come from other sectors.

As I have claimed in this and the previous chapter, the first step in this direction is to recognize that these drugs induce siddhis. The religious and mystical ramifications of these drugs have been described (though not taken all that seriously by our secular and aspiritual sciences). It is now necessary that the occult properties of these drugs be described. The broad implication here is that accepting these drugs into legitimate learning means as well accepting occultism into legitimate learning.

The science/mysticism debate, that in large part sprang from the psychedelic movement of the 1960s, though not completely legitimate, is gaining ground in the public eye and in legitimate circles. However, this approach is still incomplete in that, to substantiate itself in the long-term, it must seriously affect more than simply philosophical perceptions, though this in itself has been a very important step in the right direction. What is needed now is concrete proof of the validity of the world-view of the science/mysticism debate, and this proof will come in unraveling the implications of the occult towards science. And here, the hallucinogenic drugs could potentially play a pivotal role as the means by which to display the literal truth of occult claims, as this chapter has illustrated. For those who are too lazy to practice yoga, one may take the highly speeded up course by ingesting psychotropic drugs.

Yet the proper perspective is necessary. To define this perspective requires that we return to the four great classes of knowledge I discussed in chapter 2, and understand how these classes of knowledge relate to our everyday lives. In doing so we will automatically put hallucinogenic drugs, and their relation to science and occultism in perspective.

Fundamentally, the fact is that we are all here in this world together. What is imminently important at the present time is that we learn to coexist together in peace with ourselves and the rest of Nature. The mystical insight, which potentially can be induced with hallucinogenic drugs (as Alan Watts describes²⁵, and as I have personally experienced), is both terrifying and consoling at the same time. For when we directly experience the unity of "All That Is" (as Seth would say), no matter what subjective form this takes in our consciousness, we both realize how arbitrary our lives as human beings are, but as well how miraculous they are. Each and every individual human is directly linked to all the rest of everything in the subtlest of fashions. This means that each and everyone of us is equally infinitely powerful, though some of us may express this better than others. On the other hand, since we are all equally infinitely powerful, it's not really that big of a deal. What is fundamentally important is not each of us as individuals, but the *quality of the relationships we share*. This is the essence of the true mystical insight, the essence of the buddhic plane, and the true essence behind religion and spirituality.

In this context, everything else is unimportant. It does not matter how great particle physics is, or how dramatic Occult Chemistry is, or that thought-forms are quantum phenomena. It does not matter if occultism or mysticism are compatible with science, or that hallucinogenic drugs induce siddhis. All of this stuff is useless unless it enhances the quality of the relationships we share. *All of this stuff is useless unless it makes us better people, and thus, enhances our relationships with others*. If we cannot be kind and appreciative, then no fact, detail or theory is going to do anything. This attitude needs to be integrated into the current science/mysticism debate and into legitimate society as a whole. This is the necessary framework from which to approach any topic, be it hallucinogenic drugs, science, mysticism or occultism.

Notes: Chapter 13

¹Leary, (1964).

²Mavromatis, (1987), pages 118-119.

³Ibid., page 15.

⁴Ibid., 119.

⁵Ibid., page 120. The source of this quote is Leaning (1925).

⁶Aaronson and Osmund, (1970). For a discussion of the relationship between LSD and the mystical experience see Zaehner (1972).

⁷Leadbeater, (1984), page 7.

⁸Ibid., page 22.

⁹Flam, (1992)

¹⁰Ibid, page 983.

¹¹Freeman, (1991).

¹²Mavromatis, (1987), page 263.

¹³Van Woerkom, (1990).

¹⁴Allen, R.D. (1987), page 44.

¹⁵Cotman, *et al*, (1981).

¹⁶Ibid., page 728.

¹⁷This is exactly what occultists teach. Consider the following quote by Annie Besant:

"Western science is almost ready to accept the Theosophical view that the human organism consists of innumerable "Lives", which build up the cells...The microbes thus "build up the material body and its cells", under the constructive energy of vitality (here Besant is referring to prana, or etheric energy)...When the life is no longer supplied the microbes "are left to run riot as destructive agents", and they break up, disintegrate the cells they build, and so the body goes to pieces....(At physical death)...The body becomes a whirlpool of unrestrained, unregulated lives, and its form, which resulted from their correlation, is destroyed by their individual exuberant energy." (parenthesis mine)

This quote is from Besant, (1931) pages 8-10. There is no question that this is true. My observations completely support and confirm this occult view of the symbiotic construction of the physical body. What is interesting is we can augment and extend this view by adding that the etheric life force (prana or Chi) operates in a cyclic fashion so that the symbionts that make up the physical body alternate between a coordinated and free living form during the normal life of the body. This is true at least in terms of the tissue that we observed in our drug induced micro-psi experiment.

¹⁸Van Woerkom, (1989) says this: "The mode of action of...hallucinogens has not yet yielded to experimental inquiry." This is on page 7.

¹⁹Probably one of the most dramatic observations of Besant and Leadbeater's Occult Chemistry is the detailed description of the U.P.A. (as shown in Figure 2 of this book). Here is what is described in the appendix of the 2nd edition of *Occult Chemistry* (pages iv-vi):

"Let us examine the ultimate physical atom of the physical plane. It is composed of ten rings or wires, which lie side by side, but never touch one another. If one of these wires be

taken away from the atom, and be, as it were, untwisted from its peculiar spiral shape and laid out on a flat surface, it will be seen that it is a complete circle--a tightly twisted endless coil. This coil is itself a spiral containing 1680 turns; it can be unwound, and it will then make a much larger circle. This process of unwinding may again be performed, and a still bigger circle obtained, and this can be repeated till the seven sets of spirillae are all unwound, and we have a huge circle of the tiniest imaginable dots, like pearls threaded on an invisible string. These dots are so inconceivably small that many millions of them are needed to make one ultimate physical atom, and while the exact number is not readily ascertainable, several different lines of calculation agree in indicating it as closely approximates to the almost inconceivable total of fourteen thousand millions... The dots, or beads, seem to be the constituents of all matter of which we, at present, know anything; astral, mental and buddhic atoms are built of them, so we may fairly regard them as fundamental units, the basis of matter.

These units are all alike, spherical and absolutely simple in construction. Though they are the basis of all matter, they are themselves not matter; they are not blocks but bubbles....specks of nothingness. That is the startling, well-nigh incredible fact. Matter is nothingness."

This is probably the supreme epitome of occult physics. What we perceive as matter, whether physical or nonphysical are but patterns. Patterns of what? Patterns of nothingness. These bubbles of nothingness that Leadbeater speaks of are so incredibly minute that they are infinitely beyond the means of modern physics. Leadbeater speculates that these bubbles are the ultimate atoms of the adi, or 7th plane. They are completely nonphysical and it takes 14 billion of them to make a U.P.A.. Considering that modern physics has not even discovered the sub-quark level of the U.P.A., it seems very unlikely that it will discover these "bubbles of nothingness" at the adi level at any time in the near future, or in the far future for that matter.

However, in the context of the "color tone" view of matter I am presenting, these observations only support the contention that matter can be viewed as a dynamic flux pattern of polyphonic waves and standing waves.

²⁰This issue of the valid limits of scientific inference is not trivial, as a matter of fact it is extremely important. With particular regards to this chapter, Hillman, (1972), says the following regarding the fundamental methods used in the neurosciences today (these being histochemical and biochemical techniques, including electron microscopy): "Biochemistry, which originally studied living tissues, has been carried away by an enthusiasm for physical techniques which may change the nature of the study so that *what we discover is more a function of the method we use than the properties we seek to elucidate*," (page 110, my emphasis).

This author concludes: "A great deal of modern biochemistry of tissues in vitro is done with unknowing disregard of the laws of thermodynamics and physics...At the moment biochemistry is in a state of uncertainty because elementary control experiments for complex procedures has *never* been done," (page 114).

It is now twenty years after this was written, and to the best of my knowledge, after having done a literature search on pertinent topics, these controls have still not been done. The technical details of Hillman's arguments are far beyond the scope of this book. Yet he is correct; basic concepts taught to

every chemistry undergraduate are routinely ignored in biochemistry procedures. I know this from my own direct laboratory experience. Often in biochemistry, the rigor of standard chemistry is greatly relaxed in favor of the ease or convenience of various techniques (such as homogenization of tissues, or centrifugation), and basic chemistry principles such as diffusion, equilibria partitioning, or heat generation are assumed to be negligible. Yet these assumptions, as is made clear in Hillman's work, have never been empirically tested. Thus, as Hillman concludes:...all the findings based on (these techniques) must be regarded as unproven." (page 114).

In regard to the content and arguments of chapter 13, what Hillman's arguments mean is that scientific inference about microscopic biological structures is much more limited than is commonly assumed. Thus, there may be an equal, or even greater validity to micro-psi observations of such structures than there is to present scientific observations.

²¹This is my present field of scientific investigation: investigating the neurochemistry of the brain after a heart attack. There is growing consensus in the medical community that CPR (cardiopulmonary resuscitation) does not work. I quote from a recent paper in which I was involved: "Current clinical management of cardiac arrest is accompanied by the development of major neurological damage in 60-70% of patients who are resuscitated". This is from White, *et al*, (1991).

²²Below is a direct quote from a pamphlet printed by the Upjohn Company (No. 9443, December 1990: The Upjohn Company, Kalamazoo, MI 49001) giving prescription information to doctors about Xanax:

"Certain adverse clinical events, sometimes life-threatening, are a direct consequence of physical dependence on Xanax. These include a spectrum of withdrawal symptoms; the most important is seizure." (page 33).

"Physical Symptoms And Dependence:...The symptoms can range from mild dysphoria and insomnia to a major syndrome that may include abdominal and muscle cramps, vomiting, sweating, tremors, and convulsions. Distinguishing between withdrawal emergent signs and symptoms and the recurrence of illness is often difficult in patients undergoing dose reduction...immediate management of withdrawal symptoms requires reinstitution of treatment at doses of Xanax sufficient to suppress symptoms." (page 45)

What this translates to is that this drug is highly physically dependent. It is prescribed to people undergoing what doctors call "panic disorder". Panic disorder is a mild psychological disorder in which people may find themselves scared, overly worried about events, or afraid to be around people. This does not sound like a disorder to me at all. It would seem to me that such people simply need to be given some confidence in themselves and maybe a healthy purpose in life. But instead, the doctors prescribe Xanax, to which these people then get addicted. And if they then try to stop the drug, the patient goes into withdrawal. If you read the quote above, it recommends that the doctor then put them back on the Xanax. To me this whole situation seems very bad.

This is personal to me as well. One of my best friends is on Xanax and he is a perfectly normal, although an extremely creative and temperamental person. Apparently he went to some psychiatrist who did not know how to handle him as an individual, the doctor misinterpreted his creativity and

instead deemed it psychosis, and prescribed for him this poison. When my friend is on this drug he is very lethargic, he slurs his speech as if he is drunk, is much less alert than when he is not on the drug, and usually he just goes to sleep. Yet this drug is ok, but LSD is not. There is something terribly wrong here.

²³A good and very recent summary of the history of LSD research, and LSD in general can be found in Stevens, (1988).

²⁴Ibid., page 357-375, for a description of the "designer-drug" culture.

²⁵Watts, (1966).

Chapter 14. A New Concept Of Motion

"The most radical attacks made in the 14th century on Aristotle's whole system of physics concerned his doctrines about matter and space, and about motion."¹

With regard to occultism, modern science faces the same challenge today. In the most fundamental sense, modern occultism as a whole, as it has been presented in this book, taxes modern science's conceptions of matter, space, and motion. Occultism claims that our minds and emotions are forms of nonphysical matter. It teaches that physical space is not the only space in which our consciousness fundamentally operates, that we operate as well in the nonphysical astral, mental and buddhic spaces. These occult concepts of matter and space give rise to a subtle new concept of motion that will be defined below.

When we look to the history of science, we see that the first truly modern science, the dynamics of Isaac Newton, was the culmination of centuries of effort to unravel the fundamental nature of motion in the physical world. From the time of Aristotle until the time of Newton, Western civilization had struggled to understand why bodies fall to the Earth, why the Heavens move as they do. And men's minds passed through a myriad of superstitions and dogmas until, through the culmination of all the right circumstances, the first steps were taken in the right direction and the mathematical laws of gravity were formulated. Since that time, there has only been a continuous and ever dramatic refinement of these concepts up to today with our conception of the physical world as seen through the modern refinements of Einstein's Theory of Relativity and the Quantum Mechanics of Schrödinger and Heisenberg.

I shall now present the culminating discussion in this book concerning the relationship between modern science and modern occultism. I will summarize what has been discussed throughout the book, and lay out tentative conclusions. We will summarize the relevancy of occult concepts towards scientific theories in terms of a synthesis or fusion of science and occultism. There is simply no way I can draw firm and final conclusions at our present state of knowledge. All I can do here is sketch out the rough outlines of the directions in which modern knowledge appears to be moving. In this regard, we will discuss what such a synthesis means in light of the present historical context and the vast and profound changes that are rocking and transforming the modern world.

As I started out above in showing that modern science began when the true laws of physical motion were discovered (or what was a step in the direction of more accurate and encompassing descriptions), I feel that a strong analogy exists with this and our present situation regarding science and occultism. However, we are not struggling anymore to determine the true laws of physical motion. The struggle today in our civilization is *the understanding of the laws of our subjectivity*. As the concept of physical motion passed through many myths and

doctrines before the advent of Newton's laws, we find a similar situation with regard to the science of psychology.

What we take for psychology in our universities and academic circles today is little more than transient mythology. For these "sciences" have discovered nothing general and nothing universal about the subjective constitution of the human being. What we take for valid descriptions of our subjective constitution in these sciences today are little more than ideas which serve only to reveal our culture's underlying, and mostly unspoken metaphysical assumptions, and mostly unconscious moral orientations towards life. We are ignorant today in Western civilization about what we are and what our innate potentiality is, as subjective beings.

One of the main themes I have focused on in the discussions of this second section has been to reveal how little aware we really are of our own subjectivity. I have turned to occult doctrines to illustrate this because occultism provides alternative ways in which to see our subjective behavior, ways that make it abundantly obvious what an incredibly large role our subjectivity plays in our day to day lives. So I have attempted to show that we do not have a clear means, either scientifically or in our everyday language, for defining and understanding the nonphysical facets of our lives (such as thought, emotion and communication) and thus, we are blinded by the very factors we wish to understand.

Throughout the discussions to this point I have tried incessantly to emphasize that occultism is not at all what our culture perceives it to be, and to illustrate with example after example that occultism is the science of our subjective behavior. Though I have discussed many of the dazzling facets of occultism such as the nature of the planes, reincarnation, occult anatomy, the siddhis, and many other marvelous and wonderful facets of the occult teachings, I want to stress that the primary validity of occultism rests in its description of our subjective behaviors. *Occultism is a language for understanding in a clear and objective fashion the nature of our minds and our emotions.* If we allow these other notions to blind us from this fundamental fact, then we have not understood occultism at all.

And as I have explained what occultism is (however scant this may have been), I have as well attempted to illustrate that many of the most important concepts in occultism are identical to concepts that are, or are becoming increasingly important in modern science. Thus we have seen how occult concepts of our nonphysical behavior are identical to the quantum field descriptions of the behavior of physical matter. We have seen how the Hermetic Axiom of the occultist is identical in important respects to the fractal notion of self-similarity and serves to expand the scope of fractal geometry into the spheres of our subjective experience. We have seen how ideas from chaos theory are relevant to occult mechanisms of thought-form behavior. Before pursuing further the similarities between science and occultism, I would first like to summarize their differences.

14.1 Disparities Between Science and Occultism

We may address the issue of the differences between scientific and occult knowledge from a couple of different angles. The first is the *type* of logical method used in each branch of

knowledge, and the second are the underlying metaphysical assumptions inherent in each world-view. We will see that these two factors are intimately related to one another.

In terms of the underlying logic, modern science utilizes both inductive and deductive methods in the construction of knowledge, in whatever capacity each is appropriate to any specific discipline. Einstein's relativity, for example, begins by stating fundamental principles, and from these deduces specific predictions. In general, deduction is used to a higher degree in physics than in other branches of science. On the other hand, modern molecular biology, which is the study of the behavior of DNA, is a mosaic of different insights gleaned from experimental data, which one cannot deduce from simple starting principles. So molecular biology is primarily inductive. Similar descriptions could be drawn for all of the branches in modern science and, in general, the trend is that, the less mathematical the science, the more inductive, or dependent upon particular bits of experimental data, the science is in the construction of paradigms.

Inductive and deductive methods of logic stem from the ancient Greek tradition and approach to knowledge. This is a highly formal, and it is assumed, rigorous, fashion in which to think. In other words, the Greek tradition is, in the context of modern science in particular, and modern academic learning in general, *the* correct way to use the rational mind. This is one of the fundamental metaphysical assumptions of modern learning.

However, the methods of occult logic are not fundamentally based in the ancient Greek tradition, though occultism is by no means antithetical to this approach. In general, one could say that occult logic, at least in its traditional forms, is based on both *a priori* and analogical reasoning. Occultism starts with a general description of basic principles that are assumed correct beforehand. This is what is meant by the term *a priori*. Then, analogical correspondences are drawn, on the basis of these principles, between phenomena. This is the logical essence of the Hermetic Axiom (as above, so below); that one can draw analogies between different phenomena as a means to explain or rationalize these phenomena. Such an approach is similar to deduction in that one starts with assumed general principles. Yet occultists do not deduce particulars from first principles like a philosopher or scientist would. The occultist, by analogical reasoning, will describe how different types of phenomena are related by being different expressions of these basic principles.

Thus, the occultist relies on the use of reasoning by analogy to a much greater extent than scientists do. Scientists will occasionally reason by analogy as, for example, when the nuclear shell model was developed by analogy to the electronic shell model of the atom. But such thinking is considered informal in the scientific context. To the occultist, such analogical thinking is fundamental, and again, this is made obvious by the central position occupied by the Hermetic Axiom in occult knowledge. However, the occultist, unlike the modern academician, makes no claim that this is the only correct way to use the rational mind.

Ultimately, these differences in the logical methods used by scientists and occultists stem from the basic metaphysical assumption of what is and what is not considered valid empirical knowledge. Basically, the modern scientist, of whatever ilk, is locked into a definition of "empirical" that includes only that which can be perceived by the senses of the physical body, or by "machines" (be these physical machines, or abstract logical procedures such as statistical methods, etc.) that extend these senses. Anything outside of this scope is suspect.

The occultist, on the other hand, has a much broader definition of what is empirical. Clairvoyant observations are as much an accepted part of the occultist's empirical repertoire as are the machines of scientist. By utilizing clairvoyance, and any other siddhi for that matter, as empirical data, the occultist has a vastly greater scope of experimental data to draw upon than does the modern scientist. Thus, where the scientist must employ bulky procedures, the occultist has direct clairvoyant access. The prime example of this situation is the contrast between Leadbeater's Occult Chemistry and modern physics, though other examples are just as outstanding, such as the differences between occult psychology and academic psychology.

One of the great problems with the use of either induction or deduction in modern learning is: where does one start? In the case of deduction, the crucial question is: what shall we take to be first principles? In the case of induction, the question is: what piece of data shall we attempt to acquire? In either case, there is an outright element of arbitrariness involved, in that what is taken as one's starting point is basically arbitrary.

However, a decent understanding of occultism will display that its methods do not possess this element of arbitrariness. The Hermetic Axiom is central in occultism because, within the scope of empirical occult methods (i.e. the siddhis), one can see again and again the operation of the Hermetic principle. This is *the* fundamental *empirical* insight of occultism. Thus, it is by empirical necessity that the Hermetic axiom is the central organizing concept of occult knowledge.

Scientists, caged and limited by the senses of the physical body, have only a partial and incomplete picture, and are thus forced to rely on indirect, arbitrary or trial-and-error methods in the production of knowledge. Furthermore, because scientists have set the ground rules in such a way that they are caged by the senses, the mind and rationality associated with this approach will also be limited to the objects of the senses. This is a limited and wasteful use of the mind. The occult approach is a fuller and more meaningful use of the mind and its capabilities.

Yet, such arguments as presented above, when seen in the greater scope, are merely academic arguments. Ultimately, the issue of the differences between science and occultism comes back to one of current social perceptions of what science is or what occultism is. It is obvious that both are empirical and phenomenological approaches to the acquisition of knowledge. Yet this is not recognized because of the respective histories and resulting social perceptions of scientific and occult knowledge. Each is perceived to be different, not only by laymen but as well by the practitioners of each, and so each is treated differently. But in reality, and as one of the fundamental themes of this book, science and occultism are actually expressions of the same empirically and experientially based metaphysical approach to life, only applied at different levels of experience (see again Van der Leeuw's quote, page 20).

Yet, I think the most profound metaphysical difference between science and occultism rests in the fact that occultism is *participatory*, but science, on the whole, is *alienatory*. This is the ultimate moral implication of the different metaphysics of science and occultism. Occultism does not abstract its subject matter out of our everyday lives. Its primary orientation is to understand the processes of Nature within the context of our everyday lives. As we saw with both Seth and Dane Rudhyar, their main intentions were not simply to intellectually or objectively (whatever that may mean) describe Nature, but to describe Nature in such a way as

to make our lives fuller, richer and more meaningful. Though I did not emphasize it, this was also Besant and Leadbeater's main intention throughout their writings. Over and again, ubiquitous through all of occultism is the intention of bettering and empowering the individual human being.

Occultists utilize many notions of an explicitly moral nature such as "path" or "dharma" or "karma". *In the occult, the quality of the knowledge is explicitly dependent on the quality of the **character** of the practitioner.* The occult is as much an ethical and moral approach to life as it is an intellectual system of thought. But we must be careful here by the use of the word "moral", because what we take for proper and moral behavior in our society is not necessarily what an occultist would consider to be correct moral behavior. The ethics of occultism are not arbitrary as are the majority of our social norms of moral behavior, but are a definite corollary to the mechanisms of our subjectivity as understood in occultism. *Ethics and morality are psychological hygiene to the occultist.* We will speak more about occult concepts of morality in the next chapter.

As well, the ethical approach of occultism is an *ecological* approach in which the individual is seen as a functioning unit participating in the greater whole. The individual person--you and I--are seen in occultism as both macrocosm and microcosm; we are a reflection of the whole universe, but as well contain within us the whole universe. Stated thus the notion sounds like a paradox, but it is not. This realization is the application of the Hermetic Axiom to oneself; "As Above So Below". We contain within us worlds as the world contains us within it; Nature is self-similar at all of its myriad of levels. Again, I want to emphasize, this is an ecological and participatory approach to the study of Nature, and the moral implication of such an approach is made explicit in the occult.

Now this situation stands in stark contrast to the intellectual and moral approach of modern science. Though modern science grew out of a counter-cultural response to the Christian Church, it adopted the unconscious metaphysical orientation of Christianity; that of perceiving an organizing force that somehow or another exists outside of our actual everyday lives. The Christian faith sees their God as being outside of his creation, and science as well adopted, probably subconsciously, this subtle metaphysical orientation. Though science rejected God, it replaced the idea of God with mathematical formulae and abstract principles that, somehow or another, transcend or are outside of our everyday lives.

With regard to both Christianity and modern science, this attitude goes back, at least to some extent, to the Greek philosophers, with their distinction of "being or becoming". The Greeks were caught up in the dualism of the unchanging Heavens and the ever-changing Earth, and the entire metaphysical foundation of the legitimate Western intellectual approach grew up on this dichotomy. Yet we know today that the Heavens of outer space are as dynamic and ever changing as the Earth. Thus the dichotomy that led the Greeks to posit the dualism of "being or becoming" has no basis whatsoever in our experience today. It is high time science outgrew its clinging to outdated metaphysical distinctions.

Yet this is not simply an intellectual matter, for such an orientation has *implicit* moral and ethical connotations. Such an attitude has lead the Western mind to see itself as being outside of Nature, transcending it somehow or another, whether through an immortal soul created by God, or because of timeless abstract principles behind the ever-changing panorama

of our actual experience. Thus the Western mind has seen Nature as something to use, a mere tool for the follies of Western civilization. As science grew in power and social importance, this attitude has had more and more profound effects on our actual experience. For science came to be the creator of technology, as it is today, and these technologies were and are created with little regard for Nature or Humankind, because, implicitly, these are mere ephemerality. The result is that today we live in a world populated with arsenals of weapons that could destroy the human species, a world polluted by technologies that were not designed to operate either in harmony with the greater cycles of the Earth or in harmony with the total constitution of the human being, a world overpopulated because of arbitrary morals about the value of life. Most importantly, *the implicit moral orientation of science belittles the individual human being*, through the intimidation of unpronounceable words, or abstract concepts of Nature that are completely removed from our everyday experience, or through the description of so-called "scientific principles" that serve only to mechanize and dehumanize our lives.

Both science and occultism are moral attitudes, but they are fundamentally different attitudes. Occultism is morally explicit and participatory, science is alienating and morally implicit. I will discuss these issues in detail in section three as we attempt to understand the relation between science and occultism in the greater context of our actual experience, and how such moral orientations have very real and direct consequences on the health of our individual and collective psychology, as well as our physical bodies. The main point of raising these issues here is that this distinction is the fundamental crux upon which a synthesis of science and occultism is dependent. For a synthesis of science and occultism means that modern science *must* adopt the ecological and participatory orientation of the occultist.

We can apply our scientific tools and knowledge to occult concepts, as we have seen in our section surveying scientists who are utilizing occult concepts. But if we do not recognize the fundamental metaphysical differences between the scientific and occult world-views, and we begin to synthesize occultism with science within the context of science's implicit (and fundamentally unhealthy) metaphysics, then we will create a monster of the most unbelievable proportions. For, if I have not yet said it explicitly, let me say it now; *occult claims are real*. I know for a fact from my own limited experiences that the nonphysical planes exist, that we can travel these planes through our consciousness, and that the siddhis themselves are real, and that the quantum and ecological view of our subjectivity is indeed the correct view of the mechanisms underlying our thought and emotions. To paraphrase Robert Monroe; it does not matter what we believe, for we will all be very surprised to find ourselves alive and conscious after we die. It is inevitable that science will come to recognize these things. It already is beginning to on its own terms. For example, the subatomic particles and "shadow matter"² of the physicist *are* the etheric matter of the occultist. The hypnogogic images of the psychologist *is* the clairvoyance of the occultist (albeit more often than not, a clairvoyance of the most trivial kind). There are more examples as well, but I do not want to dwell on them here. The point is that, if these phenomena become defined by science within its present metaphysical orientation, ignoring the fact that occultism already fully understands these phenomena in an ecological and participatory context, then we will have opened ourselves up to dangers that make nuclear bombs look like a child's toy. Not only that, but science will remain in the intellectually embarrassing position of

always being "scooped" by occultism (as was the case with Occult Chemistry and occult psychology), and will forever be re-inventing the wheel.

Thus, in this work, I am explicitly utilizing occult terms, and I am explicitly discussing the underlying metaphysics of both science and occultism as I attempt to synthesize science and occultism, to avoid the terrible catastrophe of rediscovering and redefining occult phenomena in purely scientific terms. As I discuss what a potential synthesis of modern science and modern occultism may look like, we must keep in mind the ethical and moral implications involved in such an endeavor. Ultimately, the ethical implication of synthesizing science and occultism is to bring a healthy sense of spirituality back into modern science.

14.2 A Synthesis Of Science And Occultism

I call this chapter "A New Concept Of Motion" because, fundamentally, that is what we are dealing with here when we scientifically interpret occultism. It is not the motion of material bodies in the physical world though, it is the motion of nonphysical objects in the nonphysical worlds. We have already discussed this issue at great length in "The Psychological Value Of Quantum Theory". What we are dealing with here is a fusion of physics and occultism to create a new approach to psychology, and the general study of subjective events. As I envision this, concepts from quantum mechanics, fractal geometry and chaos theory will be coupled with notions from occultism to produce what we might call a "quantum psychology". Or more precisely, and in line with previous discussions of the ecological nature of occult approaches, we might call our new approach to psychology an "ecological quantum psychology". But as I shall argue below, the dichotomy between psychological and sociological processes is wrong, and it is more accurate to speak of psychosociological processes. Thus, our new approach to subjective events should be called "ecological quantum psychosociology".

This "ecological quantum psychosociology" however is only one facet of what we are dealing with when we talk about synthesizing scientific and occult concepts. The other important facet of a synthesis of science and occultism entails a modification of present day physics to accommodate the occult concepts of the nonphysical planes, and to take into account the Hermetic Axiom. Accounting for the occult concept of the planes leads to a development of the physics of subjective events. The relevance of the Hermetic Axiom in a scientific context was discussed briefly in the discussions about Dane Rudhyar and Theodor Landscheidt. Here we come to grips with the notions of time and irreversibility in physics and the relevance of occult concepts in this regard. What we find happening here is that a fusion of occultism with modern physics will produce a historical, nonphysical physics (strange terms to have side by side!).

Thus, as I see it, a synthesis of science with occultism has two main branches; the development of an "ecological quantum psychosociology" and the refinement of present day physics into a "nonphysical physics". But supplementary to this is also the need for an understanding of the geometry of the nonphysical planes. I will now address each of these three topics.

14.3 Nonphysical Physics

In scientific terms, the occult world-view of Nature is an infinitely nested fractal pattern of wave (or vibrational) interactions. In simpler terms, an occultist conceptualizes Nature as an infinite song or symphony (thus, my interpretation of quantum theory in chapter 3, section 3.2). All observable forms, either physical or nonphysical, are wave patterns, be these human or otherwise. The primary organizing principle found in this infinity of nested waves is that of self-similarity, that is, "as above, so below."

In terms of the "Grand Unified Field Theory", this occult view of Nature is the "Unified Field" that physicists claim to seek. It is not a matter of "discovering" it, for we live within it already. The issue is characterizing it in mathematical terms. The problem with modern physics and its concept of the "Grand Unified Field Theory" is that this is conceptualized in purely physical terms, in terms of the unification of the four known physical forces: electromagnetism, the weak nuclear force, the strong nuclear force and gravity (which no one is quite sure if it is a "force" or not).

Now this infinitely nested wave field of which I am speaking is mostly nonphysical, containing as it does the vast realms of emotion and mind, and *all* objective and subjective things. It includes the Theosophical septenary arrangement of planes, if we care to superimpose such a template over this field. It as well contains the realms of which Seth speaks; the "Realm Of Possibilities", his various plateaus of time and space, etc.. This is David Bohm's "Implicate Order" as well. As I try to make abundantly clear in section three, this is Infinity and we may call it whatever we wish.

Now, just because this field is mostly nonphysical does not mean that it cannot be understood in mathematical terms. As I already discussed, it is likely that mathematical systems are reflections of the inherent structure of the human mind. The human mind in turn is a product of Nature. Nature is self-similar at all of its levels, including the human mind. Thus, mathematics can as well reflect the self-similar structure of this infinitely nested field of interacting waves patterns that is Nature. Notice we are utilizing the participatory approach of the occultist.

In this conception of Nature we run into the need to superimpose some sort of template over the nebulous mishmash of infinitely nested levels of waves ("spirit" impregnating "matter" with significance). We have already seen one example of this with Rudhyar's reformulation of astrology. His concept of the zodiac, and the totality of astrological symbolism is, in his own words, a "frame of reference" to superimpose over an *a priori* formless Nature, to put meaning and organization where there seemingly was none.

Rudhyar's system has particular merit, some of which I already discussed. First and foremost is that Rudhyar's conception of the astrological symbolism as an "algebra of life" is inherently a *historical* system since it is based on the measured, relative relationship of real stars and real planets who move through time and history along with us. Thus the abstract self-similarity postulated by Rudhyar between relative positions of stars and planets and human events is historical in the most real sense, and we supersede the "being or becoming" problem in modern physics regarding the irreversibility of time. As well, his system of the self-similar correspondences found in his abstract "Laws of Cyclicity" can be applied to any level or plane of existence; physical, emotion, mental, and any other level. As a matter of fact, this is the sheer

beauty of Rudhyar's system, it encompasses all of the levels of our being in a unified and inclusive framework. Rudhyar's approach is holistic, and each definable element is seen to be both a whole in itself, as well as a component in an even greater whole of which it is a part. Rudhyar's view is eminently a participatory view which focuses on relationship amongst entities as much as on the structure and function of individual entities. And finally, since Rudhyar conceives of the astrological symbolism to embody the laws of cyclic change, and our field is one of waves and vibrations to begin with, we end up describing the vibrations of the real world with a symbol system designed to describe cycles and waves.

At this point I would like to go into some more detail about Rudhyar's concept of astrology because it is relevant in the present context of determining what is the proper template to superimpose over the infinitely nested field of waves (or "Grand Unified Field") that we are discussing.

In astrology, there is a distinction between "sidereal" and "tropical" astrology. Each of these is literally a different astrological frame of reference.

In sidereal astrology, the zodiac of twelve constellations used is the one that exists literally in the skies according to astronomical measurements. In sidereal astrology, the exact and precise *astronomical* location of the stars in, say, the constellation of Aries (or any of the twelve constellations), is used for *astrological* calculations. Thus, the frame of reference used in sidereal astrology is the exact position in outer space of the stars which make up a given constellation. What this means astrologically is that each of the twelve constellations that make up the zodiac will have more or less than 30 degrees because these constellations do not each take up a 30 degree slice of the sky relative to the ecliptic of the Earth (the ecliptic is the plane of the Earth's orbit about the sun).

However, in tropical astrology, we are dealing with a completely different frame of reference. In tropical astrology the positions of the zodiac of constellations used for astrological calculations are completely imaginary. As a matter of fact, there are no star positions used at all in the tropical frame of reference, only the astronomical positions of the planets is used. In tropical astrology, the zodiac frame of reference is an imaginary circle lying along the plane of the ecliptic of the Earth. The zodiac is defined as a circle of 12 equal divisions of 30 degrees each, beginning at 0 degrees Aries at the spring equinox.

Thus, sidereal astrology is grounded in the real world and historical positions of the stars, but tropical astrology is not. But tropical astrology is the one most used by astrologers today. So what does this mean in terms of the self-similarity of Nature principle that I am presenting here?

Well, first off, at this point I must qualify this discussion by stating that most astrologers work from a completely different conception of astrology than did Rudhyar. Most astrology today is literally grounded in ideas that were taught during the Middle Ages. Rudhyar's concepts are totally unrelated to popular astrology. His position on the technical details of astrological calculations are so complex and subtle that it has never caught on to any great extent in the astrological world³. Thus, my discussion here is an elaboration on Rudhyar's concepts and has little bearing on popular astrology. Furthermore, I am claiming that Rudhyar's ideas are relevant in the context of modern physics. Again, this is a clear cut example between

modern and rationalized occultism (Rudhyar's view) and traditional occultism (the popular view).

In terms of the difference between the sidereal and tropical astrological frames of reference, this issue of having a historical frame of reference is not as relevant to the practice of astrology as it is in the context of irreversibility in physics. Even Rudhyar himself favors the tropical system, because, in astrology, it is the *symbolic meaning* of the symbolism that is important. The issue I am discussing here of finding an abstract frame of reference that captures the self-similarity of Nature in a historical and irreversible fashion is addressed by Rudhyar in his discussions of the sidereal system. He dismisses this approach to astrology arguing first, that a true sidereal approach should contain *all* of the stars in the galaxy and not simply an arbitrary set defined by the zodiac of constellations. And second, he feels that such a *galactic* approach to human events is meaningless given the present stage of evolution of the human race. That is, since the vast majority of Humankind is still driven by primarily terrestrial based biopsychic urges and functions, a galactic-based astrological interpretation of human events would be meaningless because such galactic forces play a mostly unconscious role at our present stage of cultural development. Thus, the simple seasonal pattern symbolized in the tropical system is more than adequate to astrologically describe the events commonly found in human experience.

However, from the point of view of modern physics, Rudhyar's arguments are not pertinent. If it is indeed the contemporary physicist's desire to find the abstract pattern of relationship that ties together all of Nature (i.e. A "Grand Unified Field Theory"), then the galactic and sidereal system of astrology is highly relevant. Rudhyar is correct in criticizing current practice in sidereal astrology. The stars that make up the constellations of the ancients have no relation between them except that some ancient person thousands of years ago saw a picture of a scorpion or lion in them. Thus, a true sidereal astrology *should* contain the relative locations of all of the stars in the galaxy. In turn, this would produce an extremely immense and subtle pattern of relationship which could stand for a template frame of reference that reflects the pattern of self-similarity found up and down the infinity of nested levels of resolution that is Nature. Obviously such a program would be totally dependent on the use of computers. And the real problem with this system from the physicist's viewpoint would be *interpreting* it in a meaningful fashion. Thus, this approach is not only over the head of modern astrology, but it is also beyond the intellectual means of modern physics. Yet I predict that eventually, somehow, this type of a galactic mapping of the stars will serve a function similar to what I am defining here. Actually, the subtle and unbelievably complex patterns embodied in the relative positions and motions of all of the stars in the Milky Way galaxy might just map (that is directly correspond to) the complexity of processes occurring in the human brain. Thus, Rudhyar's "galactic astrology" may one day be the meeting ground between physics and neurology.

Let us leave Rudhyar now and turn to another alternative by which we may superimpose a template over the self-similar levels, or planes of Nature, one that is highly relevant in the context of contemporary physics. This next alternative again derives from the work of Stephen Phillips, who we will recall was the author that vindicated Besant and Leadbeater's Occult Chemistry in terms of modern particle physics. Dr. Phillips is, like myself and others, involved with understanding the relevance of the occult notion of the planes in the context of modern physics. In a personal communication, Dr. Phillips explained to me how he

has devised a mathematical theory of the septenary arrangement of the planes as taught by Theosophy. What Dr. Phillips has done here is utilize the 26-dimensional bosonic string theory, again, based on the observations in Occult Chemistry. Unfortunately I have no reference available for this work (as of 1993), but Dr. Phillips is presently writing this information up in his second book which will detail his more recent theories. However, the details of this 26-d bosonic string theory are well worked out⁴. Almost unbelievably, this model, coupled with other models of modern physics--notably the 6-dimensional hypertorus model of Superstring theory--is highly consistent with the observations in Occult Chemistry.

Dr. Phillips utilizes this 26-dimensional bosonic model of space-time that unifies the forces known to modern physics, including gravity, in conjunction with string theory models. Then, what he has done is to associate the various mathematical dimensions of this model with the seven planes as described in Theosophy. In his own words:

"Each plane turns out to be a 7-dimensional space, but four dimensions of each plane are shared by the next higher, interpenetrating plane. The four "etheric sub-planes" spoken of in theosophy are simply the 4th, 5th, 6th, and 7th dimensional aspects of (physical) matter...The astral plane, which overlaps the four etheric subplanes, extends from the 4th to the 10th dimensions, the mental plane from the 7th to the 13th, and so on, 7 dimensions per plane, until we reach the last--the adi plane--which extends from the 19th to the 25th dimension of 26-D space-time.⁵" (parenthesis mine).

And time, in this model is the 26th dimension. I cannot even begin to stress how amazing this concept is. Dr. Phillips has literally provided a mathematical interpretation of the septenary arrangement of the planes as described by Theosophists utilizing a unified model of space-time that is completely meaningful and well-known in the context of modern physics. This is an absolute first in modern history. Dr. Phillips' model accounts for the three-dimensional appearance of space in the physical world, and how these dimensions are related to the space dimensions of the nonphysical planes, as well as providing a scientific explanation of the details of Occult Chemistry, above and beyond what was discussed in section 6.2.4.

The other 22 space dimensions in Dr. Phillips' model are called "compactified" dimensions by physicists. This means that each point in 3-D space has hidden and curled up inside of it 22 different (and mutually perpendicular) possible directions in which to move. These directions are hidden unless they are "decompactified", which means these dimensions become unwound or exposed. Normally these hidden dimensions cannot be decompactified and that is why the world looks and stays three dimensional to us. One of the interesting implications of this model is that the siddhis somehow decompactify space and allow the clairvoyant to perceive into directions unavailable to most of us. A corollary to this idea is that somehow dreaming would be another psychological process related to the decompactification of space-time. Like the perturbation force he has postulated to explain the micro-psi observations of exotic two atoms states, Dr. Phillips is again presenting ideas that suggest actual mechanisms that may be involved in the use of siddhis.

As in the case of the composite quark (or sub-quark) theory he has developed to explain Occult Chemistry, his mathematical model stands among many competing models and is not verified as physical fact. Also, this model does not address the issues of time, history and irreversibility, as we might expect a "Grand Unified Field Theory" to do. However, none of the "unified field theories" in modern physics address these issues, and this is one of the great inconsistencies of modern physics. But the important contribution of Dr. Phillips' model at this point is to show once again that occult descriptions of Nature are not only consistent with those of modern science, but can be described by the same mathematical tools of modern science. That is, occult and scientific descriptions of Nature are identical. Again, I must stress to the reader that I have provided only the simplest and most cursory discussion of Dr. Phillips' work. This material is highly technical and its understanding requires much knowledge of contemporary nuclear and particle physics, and these issues are simply far beyond the technical scope of this book.

At this point I have discussed two different approaches to defining the nonphysical planes of the occultist in terms of modern physics. Dane Rudhyar's approach is relevant in the context of the current debate about time and irreversibility in physical theory. Dr. Phillips' model is relevant in terms of modern particle physics and the search for the Grand Unified Field Theory. Both of these discussions have been greatly oversimplified. However, it has been my intention to illustrate that modern physics and occult physics today converge on fundamental issues. In all likelihood, this situation will only become more pronounced over time as more scientists begin to discover the profound wealth of occult concepts.

Now I would like to turn our attention to the new concept of motion that I feel will eventually surface from a synthesis of science and occultism.

14.4 Nonphysical Geometry

As I said, modern science grew from an accurate conception of physical motion. This understanding of motion was grounded in an appropriate understanding of the geometry of the space in which this motion occurs. *All the great scientific advances, from Newton to Einstein to Schrödinger, occurred because of an accurate understanding of the geometry needed to model the problem under study.* Thus, I have made every effort throughout this work to attempt to elucidate the geometry behind our subjective experience. I believe that the hybrid scientific occultism that I am presenting here will grow out of an accurate conception of the motion of nonphysical objects. Thus, we need to develop an understanding of the nonphysical geometry of the space(s) within which nonphysical motion occurs.

Thus far we have touched upon three fundamental geometrical insights in regard to the geometry of our subjectivity. These are:

1. The ego, or point of intersection between physical and nonphysical realms, involves a Möbius type geometry (described in chapter 10).
2. Astral and mental objects behave like quantum particles (chapter 11).

3. Perceptions in altered states of consciousness have a large fractal component to them (chapters 12 and 13).

Each of these three observations embodies distinct geometrical implications. Let us now attempt a general discussion of these geometrical properties, and see if we can find a fashion in which they are all related (utilizing the vast generalizing power of mathematical thinking). Fortunately for all involved, there are no proofs given here. The following discussion will be qualitative, and is meant to outline potential mathematical directions that may be useful in describing the mathematical properties of the nonphysical worlds.

To some extent we have already touched on this topic in "The Psychological Value Of Quantum Theory" when we said that thought-forms (or subjectively speaking, our thoughts), as representative nonphysical objects, behave in a manner analogous to quantum particles. What this means in terms of their motion is that thought-forms "quantum jump". They blink on in our mind, just as a quantum particle will blink on in the quantum vacuum. And thought-forms serve as virtual quanta, holding us together in our relationships with other people. I will go into all of this in the next discussion about "ecological quantum psychosociology". For now I simply want to focus on the concept of the motion of nonphysical objects.

The question is: How do nonphysical objects move and what does this imply about the structure of the space in which they move? We have only three precedents before us in terms of physics. First is Newton's conception of motion. In this concept we imagine baseballs flying through the air, or us walking across the room. Here we are discussing continuous motion through continuous space. In this conception an object moves from point a to point b by passing through every point in some trajectory (or path) that connects points a and b. The second concept of motion we have is Einstein's concept of motion. This concept is more subtle than Newton's, in that now, objects move not through space over a period of time, but through space-time. I don't want to get into the subtleties of light-cones here. The point I want to make is that Einstein's concept of motion is like Newton's in that we are dealing with spaces of continuous trajectories. Something at point a in space-time moves to point b in space-time via a continuous path between the two points.

Our third concept of motion is that of a "quantum jump" as utilized in quantum mechanics. Here we have no parallel to Newton or Einstein's notion of continuous motion, instead we are dealing with discreet motion, that is, harmonic transitions. When an object makes a quantum jump (or quantum transition), that means that an object is at point a, then suddenly disappears and reappears at point b, without passing through any of the points in between (in a manner analogous to how the notes of a melody move one to the next in a discreet fashion). Actually, this is inaccurate from a technical point of view. There is no concept of "points in space" when we discuss quantum transitions. There are "states" (energy states). A quantum particle quantizes from state a to state b in a discontinuous fashion without ever being in any states intermediate to states a and b.

Quantum theories do not operate in one space. In Schrödinger's formulation of quantum mechanics, one uses a mathematical space called "Hilbert Space". Hilbert Space is an infinity of mutually orthogonal (or more simply, perpendicular) continuous spaces. Each discreet

state is described by a continuous space, but the transition from state to state is described by a transition from one continuous space to a different and (linearly) independent space.

Of these three choices of motion and spaces, we have already seen in chapter 11 that nonphysical objects behave in a quantum fashion. Yet we need to refine this notion to more accurately capture the behavior of nonphysical objects. For one thing, if we read closely Besant and Leadbeater's descriptions of thought-forms or elementals, they will speak of them as "hovering" "floating" or "swarming" within an individual's nonphysical bodies. And such images imply a continuous type of motion as we might find in Newton or Einstein's concepts. So how can we reconcile the fact that nonphysical objects seem to display both quantum and continuous motion?

First, what we must realize is that, fundamentally, clairvoyants like Besant and Leadbeater are describing subjective realities. We can get baffled by their descriptions of thought-forms or whatever, and we then make the mistake of being blinded by the process we want to identify. If we take too literally their description, then try to build a science from it, we are deluding ourselves by holding a thought in our mind--in this case the thought of how we visualize Besant and Leadbeater's description of a thought-form. We are too busy looking at the thought itself to realize how the thought moves in our mind. What we must first and foremost do is see how our own thoughts move through our mind. We must realize that we are dealing with subjective events. In this regard, Leadbeater's warning is apt:

"The vast majority of those who look at the pictures (of thought-forms) are absolutely limited to the consciousness of three dimensions, and furthermore, have not the slightest conception of that inner world to which thought-forms belong, with all its splendid light and color."⁶

So let us attempt to see how our thoughts move within our own subjectivity. Let's try a simple exercise here to illustrate this motion. What I ask here is that you watch in your own mind where each image comes from as we go through this "train of thought": Think of your mother. Look at her face. What is the expression? What color are her eyes? What happens as you hold each of these images in your mind?

I do not know if this exercise was effective in illustrating the motion of the reader's thoughts, but what it was meant to illustrate is that *thoughts seem to sink one into the next, or grow or bud out of each other*. Each thought seems to be contained in the previous thought. That is to say, *thoughts are nested*. And they are not nested in any particular geometric pattern either. Perhaps when you imagined your mother, you thought of her one day while the family was on a picnic; you saw her in a green dress sitting under a tree, then you thought about the picnic and what you did that day. And all this might have occurred in your mind before you even read the next sentence of this text, because it is obvious that the mind moves from association to association very quickly.

And it is this motion that I want to describe here; how the mind moves from association to association. Again I have to present the following quote by Alan Watts:

"Closed-eyed fantasies in this world (of one's hallucinations) seems sometimes to be revelations of the secret workings of the brain, of the associative and patterning processes, the ordering systems which carry out all our sensing and thinking. ...they are for the most part ever more complex variations on a theme - ferns sprouting ferns sprouting ferns in multidimensional spaces, vast kaleidoscopic domes of stained glass or mosaic, or patterns like the models of highly intricate molecules, systems of colored balls, each one of which turns out to be a multitude of smaller balls, forever and ever- Is this perhaps, an inner view of the organizing process which, when our eyes are open, makes sense of the world even at points where it appears to be supremely messy?⁷" (parenthesis mine)

In my experience, this is probably the most vivid description I have ever seen of the motion of thoughts. Ernest Wood discusses how our thoughts are like a Chinese box in which there is a box within a box within a box. And in our mind we have a thought within a thought within a thought.

But the situation is obviously not so simple, because any thought can trail off into potentially many thoughts. So instead of thinking of my mother at a picnic, I imagine her home cooking dinner, or I imagine her tucking me into bed as a child, or I imagine her scolding me, or sitting and watching TV. So the initial thought of "mother" can give rise to almost any other thought I could have. The point is that any thought can trail off into any other thought, and it is our *intention* that directs the process. Without the intentional direction of our train of thought (which is a function of the ego as I discussed in chapter 10) it seems that *any given thought contains within it all of our other thoughts*.

Now, though we discussed the three types of motion and associated spaces found in physics-Newton's, Einstein's and the notion of a quantum transition-it seems that we are dealing with an altogether different type of motion when we look at how our minds move. Indeed we are, but it is not a motion without precedence in the mathematical and scientific world. Yet the concept I am about to introduce that defines the motion of our minds is itself not thought of as a form of motion, though I am going to treat it as such. This process is that found when one "zooms in" on a fractal curve with a computer. *I claim that this process of zooming in on the details of a fractal curve mimics very important, and as yet unidentified, processes of motion in the mind.*

When one watches a film of a computer scanning in on progressively finer and finer details of a fractal curve, then one is seeing a slow motion representation of how our mind moves from concept to concept. That is to say, this fractal zooming process is fundamental in the patterning and associative processes of the mind. This is how the mind moves. This is how nonphysical objects move. This fractal zooming is the main qualitative feature of nonphysical motion, and as such serves as the basis for all types of subjective motion.

Let me discuss now at some length what this process of fractal zooming entails. Then I will discuss in what respects this mathematical process does and does not share features with the movement of nonphysical objects, and in doing so I will be presenting a new concept of motion.

Mathematically, when we construct a computer image of a fractal (if the reader is familiar, it will help to imagine the Mandelbrot set as our fractal), what we are doing is generating the fractal as it is defined at a particular level of resolution. At this level of resolution we will only see finite detail, both because of the computers limitations, but as well because of our eye's ability to resolve the image. In Plate 13, I have given an illustration of a very discontinuous fractal zoom, that, even though it does not display the seeming continuity of a film zoom, still illustrates many of the properties of the fractal zoom process.

Now we can arbitrarily pick any region of the fractal along its boundary and magnify this region and generate a new image. It is the same fractal, but we will see a different visual representation of it, we will see what it looks like at a different level of resolution. Now what we want to do is pick our regions in such a way that the next one is only slightly smaller than the previous region. As we generate these regions of slowly decreasing area, each time we have a complete image, we want to transfer the complete image to one frame of motion picture film. What we will then have is a piece of film in which each progressive frame contains the image of our progressively smaller regions of the fractal. When we then watch this film it will look as if we are going deeper and deeper into the detail of the fractal. This film is a fractal zoom. And this entire process of making the film is what is needed to understand how one constructs a fractal zoom.

When we watch this film, what happens is that there is a definite sense of motion involved, a sense of going deeper and deeper into the details of the fractal boundary. As well, this zooming process seems to take advantage of the organic sense of depth and illusion of perspective found in a fractal curve (see Plates 3, 5, and 6 which illustrate this quality). We can zoom in on a curly cue (for lack of a better term) and see curly cues shrink off to infinity. What is most amazing about these fractal zooms, referring to Plate 13, is that we will go deeper and deeper through one explosively beautiful panorama after another and then, seemingly out of nowhere, we are back where we started. Or it least it appears we are back where we started. For we will eventually come upon an image that looks identical to where we started our zoom, but now we are perhaps a million-fold inside of our original image. This again is self-similarity, and we find the same pattern repeating at different levels of resolution. In the case of the Mandelbrot set, as seen in the zoom of Plate 13, there are infinitely many copies of the set contained within itself.

All of these properties associated with the fractal zoom process can be found within the movement of our minds.

One thought will nest inside of another thought, branching off into any conceivable direction or association. And we pass through a myriad details only to return again to the same thought, perhaps in the same train of thought, maybe in a later one. But like the Mandelbrot set, it is not the same thought as it was before, it is a new thought in a new context. It seems to be the same thought but is, in reality, at another level of resolution within our mind.

However, the Mandelbrot set has a definite "top" level of resolution to it (defined by the region on the imaginary plane of 4 units in the x direction and 2 units in the y direction, centered at the origin). The mind has no "top" level of resolution to it. The mind is like Nature, it is simply an infinite nesting of self-similar levels with no inherent geometrical organization. Any

organization we see to the mind is a template our mind has superimposed over itself. The implication of this fact will be discussed in the next section.

As we saw with the example about our mother above, there are potentially many directions of association available in which to move away from a thought. This same feature is found in the fractal zoom process. At any level of resolution of a fractal, there are many "directions" we can zoom-in on, yet any zoom entails the inspection of finer and finer details around one point. Thus, alternate paths of thought are similar to the alternate zooms possible on a fractal curve. This notion also gives rise to a new concept of "probable realities", but I will let the reader figure this one out.

Trying to explain the similarity of the mind's motion to the fractal zooming process is a very difficult concept to discuss in words. Yet it is crucial for a true and accurate science of the mind to pinpoint and identify this motion, for this nonphysical motion that is represented by the process of fractal zooming is not only relevant to understanding the motion of our minds, but also is important for understanding how we move in our dreams.

We have all had the experience in our dreams of thinking we were about to enter one place but, upon walking through the door, find that we were somewhere else that we did not expect to be. Normally we dismiss this as nonsense because physically we do not experience this. But when one comes to recognize how their physical mind moves, they will also realize that this same motion occurs in dreams, as in the example I just gave. Even though dream motion at times seems to involve discontinuous "quantum jumps", I will now argue that this motion is but a special case of the more general discontinuous motion found in the process of fractal zooming.

The crucial similarity between the fractal zooming process and the mind's motion is that they both are inherently quantized. The continuous motion of the fractal zooming process itself is an illusion, what is really going on is a discreet process. In the case of the fractal zoom, the illusion of continuity is created by the fact that the difference in areas of each successive frame of the zoom is small. Thus, when we run a film of these frames, the zooming motion appears continuous.

In this regard we have a theoretical explanation of the lock-mold cycle I described previously (in chapter 13). Our consciousness is fundamentally made up of discreet transitions, but the discreet transitions are either so close to each other, or move faster than our focus of attention, so that we perceive continuity where there really is none. Again, this process is identical to the way motion is created in cinematography; the technologies we create are a reflection of ourselves, the creators. I believe this is why clairvoyant reports will have descriptions of discreet and continuous phenomena simultaneously; the quantum phenomena are fundamental, but at any given level of resolution (plane) there will be phenomena that appear continuous because these will move faster than the focus of attention. Thus, the motion of nonphysical objects is quantized but not in the same sense that objects in quantum theory are quantized, but in the sense that the fractal zoom is quantized.

Now as I am presenting these notions about the motion of nonphysical objects, I am aware that these notions are still in need of greater refinement. They serve, at this level of formulation, to make sense of phenomena that are not presently understood in science, such as thinking or dreaming, in a qualitative, though mathematically suggestive way. That these notions are related to fractals points to the necessary mathematical directions. At this time however, it is

simply my intent to describe these processes, to point them out as I see them. Again, it is my hope that this is not the last word on these subjects.

Thus, the "new concept of motion" that results from a scientific interpretation of occult phenomena is the fractal zoom nature of the movement of nonphysical phenomena such as our minds, or our dreams. We are dealing here with quantized transitions that bleed into each other in a fashion identical to that found in zooming in on the finer and finer details of a fractal. However, though the abstract relationship (i.e. patterning and associative processes) which organizes the mind is identical to that found in the fractal zoom process, the concept of "level of resolution" as used in fractal geometry takes on a different meaning when applied to the mind. We are not dealing with areas on a plane as we are with fractal zooms when we look at the levels of resolution of the mind. The levels of resolution of the mind are *patterns of intent*. In some fashion, these patterns of intent are related to each other in a fractal-like fashion, but it is unclear to me how this could be expressed mathematically. Perhaps it does not need to, or cannot be expressed mathematically. Perhaps this "new concept of motion" of nonphysical objects will only serve as a metaphor as to the fundamental and inherent motion of the mind and other nonphysical objects.

In the connection of nonphysical geometry, the second point I would like to address is how clairvoyant or occult perceptions, or more generally, any altered state of consciousness fits in with this idea of the "fractal zoom" nature of the mind's motion.

Now, as has already been mentioned, occult perceptions are not the only perceptions relevant in this regard. To use Mavromatis' classification scheme, the following "altered" states of consciousness are also relevant to this discussion: dreams, hypnagogia, meditation, the mystical experience, schizophrenia, creativity, hypnosis, sensory deprivation, electrical stimulation, hallucinogenic drug experiences, eidetic imagery and epilepsy.

In each of these altered states of consciousness, we find overwhelming similarities to the visual imagery (or so-called "hallucinations") perceived. Plate 4 is modern psychology's attempt to find the "universal hallucinatory image", but I have already argued that modern psychology has focused on the wrong levels of geometric similarity. That is, the "lattice tunnel" of Plate 4 is merely an illusion created by the true fractal nature of these imageries. What I will now do is isolate out the common geometric factors in the imagery perceived in these altered states of consciousness. That is, we are now going to define, as rough and crude and as qualitative as this attempt may be, the general geometry of nonphysical spaces.

Let us begin this attempt by considering the following quotes by Leadbeater concerning the nature of what is perceived on the nonphysical planes. In regard to astral plane vision, Leadbeater says the following:

"(To look at an opaque cube) astrally you would see all the sides at once, and all the right way up, as though the whole cube had been flattened out before you...You would be looking at it from another direction, at right angles to all the directions we know.'⁸ (parenthesis mine).

Leadbeater then goes into a description of 4-dimensional space, and claims that astral plane vision is the perception of the fourth dimension of space. Elsewhere he says the same:

"Looked at on the astral plane, for example, the sides of a glass cube would all appear equal, as they really are, while on the physical plane we see the further side in perspective--that is, it appears smaller than the nearer side, which is a mere illusion. It is this characteristic of astral vision which has led some writers to describe it as sight in the fourth dimension--a suggestive and expressive phrase."⁹

Leadbeater advocated the idea that astral sight was a perception into a fourth dimension of space. However, he never pursued this idea to any great extent, which is no surprise considering the tremendous variety of topics with which he dealt.

Let us here start with the relatively simple-minded supposition that astral sight is the seeing into a literal fourth space dimension. In this regard, we can get an idea of how this might appear to an observer if we look at Plate 2. Here is an Escher engraving that is aptly, for our purposes here, titled "Another World". Here Escher is giving us some idea of what it may be like to have astral vision, as in this print we see the duck-man creature from three simultaneous perspectives: from below, from behind and in front. So in some sense or another, we seem to be viewing this scene from a position that is at right angles to the normal space of our 3-D consciousness.

In this regard, let us now look at the Tantric mandala in Plate 7. I have argued that this Tantric art very likely reflects imagery of altered states of consciousness. What we see here, as we progress outward from the center of the mandala, are what appear to be many separate three dimensional spaces. There is the central three dimensional space of the mandala and then six separate three dimensional spaces that are rotated relative to the central space. In the cube surrounding the central circles, there are four 3-D spaces perpendicular to the central space. Along the periphery of the image are many buddhas floating in what appear to be their own separate 3-D spaces. Again, we could interpret this image as an attempt to display on a two dimensional medium, perceptions that are inherently four dimensional.

Yet, we still must account for the "lattice tunnel" effect of the imagery of altered states of consciousness, and thus, the fractal-like nature of this space. There is no good geometrical reason why a nonfractal four dimensional object would display this illusory "lattice tunnel" effect. What we must do is reconcile the four dimensional interpretation of this imagery with the fractal geometric interpretation of this imagery. Can we perhaps say that this imagery occurs in a *four dimensional fractal space*?

If we look to the other Tantric images provided in Plates 8, 9 and 10, we can begin to discern an answer to this question. In Plates 8 and 9, we can see the floors of the Tantric temple stack in a fractal-like fashion. In Plate 10, the statue's head also stacks in a fractal-like fashion. If we take each face of the statue, or each floor of the temples to represent a single three dimensional space, then it is obvious that these separate three dimensional spaces are stacked in a fractal-like fashion relative to one another. That is, each of the separate 3-D spaces is related to the others by being self-similar replicas of each other. Thus, these images make it obvious that, *to a large extent, perceptions in altered states of consciousness, are perceptions of a four dimensional fractal space. And thus, definite levels of nonphysical*

space geometry are indeed four dimensional fractal spaces. Again, the key to this interpretation is to realize that separate spaces stack upon each other in a fractal fashion, or that separate 3-D spaces are self-similar to each other.

In a normal four dimensional space, separate three dimensional spaces are stacked upon each other in a fashion equivalent to stacking up an infinity of two dimensional planes to form a three dimensional solid. What this means is that all of the axes of each separate three dimensional space are identical and coincide with each other (in technical jargon, the axes of a normal three space are "scale-invariant"). In a fractal four dimensional space however, the axes of each three dimensional space are somehow scaled and rotated relative to one another in such a fashion as to produce the effects observed in Plates 8, 9, and 10. These would be the "multi-dimensional spaces" that Alan Watts describes in the quote on pages 202 and 271. An interpretation of this imagery simply as being a perception into some fourth space dimension is not correct by itself. This idea has to be amended with the notion of the fractal-like stacking of separate three dimensional spaces to form a four dimensional fractal space, and then we will have a more accurate conception of the space in which the images of altered states of consciousness appear.

Now, having some concept of the geometry of nonphysical worlds, let us turn to the issue of the Möbius nature of the ego (see chapter 10). To repeat, the reason we have applied the concept of Möbius geometry to the ego is because this geometry provides a means by which a point, surface or space may simultaneously point in two seemingly opposite directions. Again, the fundamental point about this concept is that we are discussing the *geometry of intersection* between physical and nonphysical, inner and outer, subjective and objective.

Now why would the intersection of our three dimensional physical space with (as we have argued above) the four dimensional fractal space(s) of the nonphysical worlds produce a Möbius-like geometry? Frankly I do not know the answer to this. Yet it is apparent that this is the case. I feel that this clue is fundamental and that any mathematical model of the nature of the planes must account for this fact, for it is an empirically observed reality. The connection points between our physical three dimensional space and the vast four dimensional fractal spaces of our subjectivity are not simple points, they are Möbius points. At my present stage of investigation, it is unclear to me *why* we observe this Möbius connection between the physical and nonphysical, but the functional significance of such a geometrical arrangement is obvious. As I said, such a geometry allows an object to exist in both spheres simultaneously.

The point of this discussion is, again, we can most definitely interpret occult descriptions of nonphysical reality in mathematical and scientific terms. That we can say there is a definite geometry to the imagery perceived in altered states of consciousness is of the most profound importance. Theoretically, *one could scientifically come to understand the relative relationships amongst the planes of Nature, and this would lead to a scientific cosmology that dwarfs anything being presently entertained by the scientific community.* Such a cosmology would contain not only the objective physical world, but also the subjective nonphysical worlds.

I spoke briefly about the implications of occult notions for concepts such as space travel and time travel (in section 6.2.3). The type of mathematical cosmology I am describing here could lead to much more than simply a bunch of cute ideas in these regards. If we could

develop a precise understanding of the mathematical relationships between the outer objective physical world and the inner subjective nonphysical worlds, then there is simply no telling what Destiny would hold for the human race. It is, however, simply my hope at this point to stimulate thinking along the lines I have laid out here.

14.5 Ecological Quantum Psychosociology

Aside from the very dramatic possibilities inherent in the above discussion, what we have done above is lay a "hard science" foundation for a theory of psychological and sociological processes. We have described, as rough and as sketchy as it may be at this point, the physics and geometry of nonphysical objects. What we may then do is build upon such a nonphysical physics and attempt to describe the subjective processes involved in our experience as human beings.

I have already undertaken many of these steps in the preceding chapters. Scientific and occult concepts were utilized in tandem to define our subjective experiences of sensation, emotion, and thought as being responses to, or senses for, the vibrations of nonphysical matter (chapter 9). We discussed the gestalt/ecological nature of our personalities in terms of the Möbius geometry of our nonphysical psyche's intersection with the physical world (chapter 10). This geometry gives rise to the ego, to our sense of self, of "I-ness". This "I-ness" is in turn like a magnet or a whirlpool, drawing round it nonphysical objects such as thoughts (thought-forms) and emotions (elementals), these in turn forming our personalities. This view allows us to see our personalities as an ecosystem of nonphysical objects: thoughts and habits, memories, opinions, attitudes, tendencies and emotional orientations. Next it was explained how these nonphysical objects behave like quanta of "psychomagnetic radiation" (in chapter 11), binding our minds into gestalt configurations, and binding us into the greater social systems of which we are a part. These ideas taken together form the backbone to an "ecological quantum psychosociology". Let us elaborate on this model now and present it in a unified fashion.

The root of this whole approach stems from not only Besant and Leadbeater's conception of thought-forms, but as well from the ideas of a British ethologist named Richard Dawkins. Dawkins is well known for his book *The Selfish Gene* in which he refines concepts of Darwinian evolutionary theory. The essential gist of this book is that the organisms that form biological life are "survival machines" created by the genes (DNA) to ensure the survival of the genes. I have to a minor extent touched on the differences between scientific and occult concepts of evolution elsewhere. In light of what was said above about the differences between the underlying metaphysics of science and occultism, this is another example. The title of the book speaks for itself. I do not agree with Dawkins that our lives are merely "survival machines" for the DNA nested deep within our cells. From an occult viewpoint (mainly Seth's viewpoint), our physical organism (i.e. physical body), our DNA, and our consciousness (ego/personality) are, as Seth says, involved in a great cooperative venture in which each serves to enhance the value fulfillment of the others. Since I am now to draw on Dawkins work to some extent, I feel that it is important to make clear that I do not accept his implicit metaphysical orientation.

Dawkins puts forth in this book a very unique idea concerning the mechanisms of cultural evolution and cultural behavior. First, he has defined DNA to be the fundamental "replicator"--or unit of evolutionary transmission--in biological evolution. He then draws analogy with this concept and defines (or postulates) an equivalent type of replicator present in cultural evolution. These he calls "memes". To quote somewhat extensively from his book:

"Most of what is unusual about man can be summed up in one word: 'culture'...Cultural transmission is analogous to genetic transmission in that, although basically conservative, it can give rise to a form of evolution...Language seems to 'evolve' by non-genetic means, and at a rate which is orders of magnitude faster than genetic evolution.

Cultural transmission is not unique to man...There are other examples of cultural evolution in birds and monkeys, but these are just interesting oddities¹⁰. It is our own species that really shows what cultural evolution can do. Language is only one example out of many. Fashions in dress and diet, ceremonies and customs, art and architecture, engineering and technology, all evolve in historical time in a way that looks like highly sped up genetic evolution, but really has nothing to do with genetic evolution...

The analogy between cultural and genetic evolution has been frequently pointed out...for an understanding of the evolution of modern man, we must begin by throwing out the gene as the sole basis of our ideas of evolution...

What, after all, is so special about genes? The answer is that they are replicators. The laws of physics are supposed to be true all over the accessible universe. Are there any principles of biology which are likely to have universal validity?... Obviously I do not know but, if I had to bet, I would put my money on one fundamental principle. This is the law that all life evolves by the differential survival of replicating entities. The gene, the DNA molecule, happens to be the replicating entity which prevails on our own planet...

I think a new kind of replicator has emerged recently on this very planet. It is staring us in the face. It is still in its infancy, still drifting clumsily about in its primeval soup, but it is already achieving evolutionary change at a rate which leaves the old gene panting far behind.

The new soup is the soup of human culture. We need a name for the new replicator, a noun which conveys the ideas of a unit of cultural transmission, or a unit of *imitation*. 'Mimeme' comes from a suitable Greek root, but I want a monosyllable that sounds a bit like 'gene'. I hope my classicist friends will forgive me if I abbreviate mimeme to *meme*...

Examples of memes are tunes, ideas, catch-phrases, clothes fashions, ways of making pots or buildings arches. Just as genes propagate themselves in the gene pool by leaping from body to body via sperm and eggs, so memes propagate themselves in the meme pool by leaping from brain to brain via a process which, in the broad sense, can be called imitation"¹¹.

Dawkins then goes on to explain that the survival of memes is not necessarily related to the survival of DNA. That is, memic evolution is a separate form of evolution *built* upon biological evolution, but independent of it as well. He points out how memes can exist that are antithetical to the survival of the genes, such as memes for suicidal behavior, or the various memes for celibacy.

There are many important features of this notion that are relevant in the context of an ecological quantum psychosociology. First, Dawkins has postulated a mechanism of psychological and social behavior that is *species independent*. The idea of memic evolution applies to any species that shows the ability to learn behaviors and transmit them in a cultural fashion. This is a first and necessary step for any true theoretical psychosociology. Humans are not the only organisms with brains and nervous systems, and a general psychosociology must be broad enough to account for the behavior of any sentient creature.

Secondly, the actual mechanism he suggests in memic evolution is identical in both the process of learning and the process of cultural transmission. He calls this process *imitation*. But we have already refined this mechanism in other discussions by speaking of the process of communication and social interaction in terms of *resonance*. Broadly speaking, these processes are identical; imitation is psychological resonance. Thus we have a mechanism of psychological behavior that is species independent. But more importantly, this mechanism is amiable to mathematical analysis. Imitation as a form of resonance implies waves, or wave-like behavior (or more precisely, phase-coupled behavior), thus this notion fits in with our nonphysical physics which sees all interaction as wave interaction or resonance.

Now what had utterly amazed me is that, a couple years after having read Dawkins' notion of memes and seeing its inherent utility as a fundamental concept in any worthwhile approach to a science of psychosociology, I came across the book *Thought-forms* by Besant and Leadbeater. We have discussed the nature of thought-forms at some length, but what is important to realize at this point is that *the thought-forms of Besant and Leadbeater are exactly the memes of Richard Dawkins*. Both of these concepts are identical.

Again, I can't help but point out, we see another example of occultists beating scientists to the punch-line. *Thought-forms* was originally published in 1901. Dawkins' ideas were not presented until 1976, and there is no other idea in modern science equivalent to Dawkins' idea of memes.

Now the idea of thought-forms is actually more substantial from a scientific point of view than the idea of memes. Dawkins only speaks nebulously of memes "jumping from brain to brain", and that somehow, memes must be the long sought after "memory traces" of the neurophysiologist. Again, the scientific view is only seen in physical terms. Besant and Leadbeater's notion of thought-forms is a nonphysical concept, infinitely rich in its descriptive capabilities. The concept of thought-forms is already inherently described as a phenomenon of resonance, both in the creation of a thought-form (on the mental plane) and its effects and transmission. And as I already discussed (chapter 11), the idea of thought-forms leaves itself open to mathematical analysis by means of quantum mechanical concepts, chaos theory and the theories of nonlinear phase-coupling.

Again, I want to emphasize that the approach to psychosociology I am presenting here is grounded in concepts used to describe purely physical phenomena. As such it illustrates that

nonphysical phenomena are tractable to the same types of mathematical analysis as physical phenomena (or, as we should be used to by this point: "As above, so below").

From the standpoint of an operational theory of psychosociology, there is also another important fact built into both the idea of memes and the ideas of thought-forms. This is their ecological nature. What I mean by this is the idea I expressed in the discussion "What Is The Ego?" and this is that *thought-forms or memes form a nonphysical community or ecosystem of entities in human minds*. Thought-forms/memes are symbionts in the human mind. Note here that I have said "mind" and not "brain". Memes/thought-forms are inherently nonphysical mental creatures, though they leave definite physical effects in the brain as we shall discuss below.

Now I would like to turn back to the mechanism of resonance by which thought-forms/memes operate and discuss this in greater detail. This mechanism explains many things, but to see this we must first get our terms straight. For example, in psychology the concept of "learning" is investigated, but the concept itself is nebulously defined. Maybe it is thought of in terms of problem solving tasks such as teaching a rat to run a maze, or teaching a pigeon to press a particular button for food, or teaching a child a mathematical theory. Yet, in reality, learning, in these terms, is only a special case of a more general process, and that is the process of cultural transmission. That we can teach a rat something that a human understands, means that to some degree, cultural transmission is an interspecies process. This has vast implications in terms of any attempts we may make to communicate with other species, such as dolphins.

Not only do we see a confusion of terminology in present day psychology, but we see the same problem in present day sociology. Many social phenomena are discussed in the same nebulous fashion as seen above. For example, sociologists speak of "primary group conditioning" as a process in itself. In reality this concept means that we learn from those in our immediate environment; family, friends, co-workers, etc.. But this process is only a special case of learning, which we already said is a special case of cultural transmission. Thus, if we try too hard to stick to accepted terminology, we will ultimately only confuse ourselves.

The point here is that psychological and sociological processes are so interrelated that it is misleading, and probably wrong, to discuss them as if they are separate phenomena. Learning, memory formation and personality development are intimately related to the social system in which these processes occur. We simply cannot get a clear comprehension of these processes if we abstract them from one another. Thus I prefer to speak simply of nonphysical processes instead of making the distinction between psychological and sociological processes. Furthermore, as I already pointed out, all types of psychological and sociological processes are grounded in the same mechanism; this being (psychomagnetic) resonance. Thus, I prefer to speak of the various nested levels of resolution at which nonphysical resonance occurs. Then, for example, a personality is seen as a nonphysical community or ecosystem nested within a greater nonphysical community or ecosystem, this being a culture.

With our terminology straight, we can now discuss the process of psychomagnetic resonance and how it leads to the formation of various nested levels of resolution of nonphysical ecosystems. When these processes of resonance are discussed in terms of quantum mechanical processes this is what I mean by an "ecological *quantum* psychosociology". As a matter of fact, in this model, as we have seen already (chapter 11), we describe psychological and

sociological processes analogously to how physicists and chemists describe the structure of matter.

Now chemists and physicists do not normally think of molecular structure as "ecological", but in a very real sense it is. A protein molecule for example is composed of perhaps 10,000 atoms (mainly carbon, hydrogen, nitrogen and sulfur). I do not think it is unfair to modern chemistry to view such a massive structure (from a subatomic point of view) as a habitat for electrons and protons. However, the word "habitat" is normally reserved for biological species. The implicit difference being that species evolve via natural selection but atoms do not. Because biological species have left obvious signs of evolution (i.e. fossils and genetic records) we think of biology as a historical science. But it is widely accepted today that atomic evolution occurs inside of stars and man-made accelerators. Modern cosmology itself is in large part the struggle to understand the evolution of the atoms of Nature. But because atomic evolution occurs at a completely different scale of space and time, we do not think of atoms as evolving via natural selection.

Yet this view again rests in the "being or becoming" dichotomy that runs through modern science. The concepts of real-life time and irreversibility play a meager role in our present mathematical descriptions of atoms (quantum mechanics) and space and time (relativity). But on the other hand, biologists are forced to think of the evolution of species in an irreversible, and hence, ecological sense. It seems to me that as our understanding of atomic phenomena at the empirical level grows, physicists will eventually have to adopt an ecological view of the structure of physical matter.

But in our attempt to understand the quantum nature of social interactions, we do not need to be held back by such academic concerns. First, at this stage we are only presenting a rough and crude qualitative picture of the quantum nature of nonphysical realities. And second, modern physics is more than capable of correcting its present inadequacies. Let us then review our rough picture of the quantum interactions involved in human behavior.

Thought-forms can be thought of as quanta which carry the essential force of nonphysical objects. In the chapter "The Psychological Value Of Quantum Physics" I called this the "social force", but in the chapter "Biological Perceptions" I called it the "psychomagnetic force". I will use this latter term because it is more descriptive, though both can be interchanged with no semantic difficulties. Whatever we call it, this force is the basis of the resonant behaviors of nonphysical objects. Thought-forms are the carriers of this psychomagnetic force. Subjectively speaking, the psychomagnetic force is *meaning*, it is the cognitive and emotional value we give to our thoughts and perceptions. And like the quanta of subatomic matter, this psychomagnetic force is of a two-fold nature; repulsion or attraction. Depending on the qualitative and particular nature of any given thought-forms, they will essentially either attract or repel each other.

Now when we speak of a force in modern physics, there is always a force-field associated with the force. Thus the (Newtonian) gravitational force is associated with the gravity field, or the electromagnetic force is associated with the electromagnetic field, and so on for the two other forces. The question arises; what is the field associated with the psychomagnetic force?

Now the answer to this question is simple in theory but slightly more involved with regard to our actual subjective behavior. The psychomagnetic force as has been discussed to this point is the sum of two forces, and thus represents two force-fields. These force-fields are the astral and mental planes. I have discussed the fact that in our normal day to day behavior we quite subconsciously intertwine our emotional and mental behavior to such a great extent that we are not capable of dissecting our subjective responses into distinct emotional or mental components. Thus our subjectivity is primarily in the form of *attitudes*, these being the intimate associations of thoughts with emotions.

But as I discussed with regard to contexts (in "The Gestalt Nature Of The Mind"), attitudes resolve themselves into, on one hand, an attractive or repulsive emotional component, and on the other hand, a set of facts that have some particular and unique meaning (or cognitive value and content) within the emotional context. Both of these components taken together are what I have been calling the "psychomagnetic force". But in reality we are dealing with two forces; an emotional or astral force, and a mental force. The emotional force, though expressed through the spectrum of human emotions, always resolves itself into the simple dichotomy of emotional attraction or emotional repulsion. The mental force is more complex in that, on one hand, there are levels of mental meaning (or cognitive substance) that are dichotomous or dualistic, but there are also levels of meaning in which there is no dichotomy, only a holism or gestalt of meaning.

This two-fold nature of the mental force is recognized in occultism in the doctrine of the "higher" and "lower" mental planes. Normally it is taught that the "lower" mental plane consists of thoughts that are bound in the desires of physical existence (such as sexual desire, hunger, prestige, possessions etc.), and that the higher mental plane houses those thoughts not ground in the desires of physical existence (meditation, the desire for enlightenment, etc.). This view is not incorrect, but as usually stated it is misleading. It is true that the mental plane has a two-fold nature, and we may speak of the "lower" and "higher" mental planes if we wish, but these regions of the mental plane do not follow the separation popularly given to them. *The two-fold division of the mental plane rests in the fact that some levels of thought (i.e. the thought-forms of the "lower" mental plane) exist only in relation to the opposite thought, but other levels of thought (the thought-forms of the "higher" mental plane) exist without having an opposite.* The dichotomous levels of thought can be taken as the "lower" mental plane, the nondichotomous levels of thought can be taken as the "higher" mental plane.

Examples of lower mental plane thought-forms can only be defined in pairs of opposites. Examples of such thoughts are; up/down, left/right, left/took, positive/negative, good/bad, lower/higher, girl/boy, man/woman, young/old, night/day, hot/cold, existence/nonexistence, explicit/implicit, loose/tight, yin/yang, clear/muddled, and so on. As well as such dichotomous thoughts, other common thoughts which are grounded in our physical experience are of the "lower" mental plane variety. These are thoughts such as: building, paper, shelf, car, TV, school, church, food, space, time, matter, or even verbs that reflect physical experience such as run, eat, sweat, desire, die, born, cry, sleep, meditate, etc.

Examples of higher mental plane concepts are much more tenuous and practically impossible to express in words. Most expressions of mystical insight, or cosmic consciousness, are expressions of higher mental plane thought-forms. These thoughts have to do with the unity

or oneness of things and cannot be represented easily with one word as "lower" mental plane thought-forms can.

In the occult this distinction rests on the fact that "lower" mental plane thought-forms are polarized towards the physical and astral planes, whereas "higher" mental plane thought-forms are polarized by the buddhic plane.

The point is that, when we are dealing with the mental component of the psychomagnetic force, it can potentially reflect either "higher" or "lower" mental plane field forces. Since most of our day to day subjective content is a reflection of our physical experience, we will find that in the vast majority of cases the mental component reflects the "lower" mental plane forces. I should point out that this is in no way derogatory, as the occult terminology might, and does at times, imply. We live in physical existence and it is only expected that the majority of our thought should be a product of "lower" mental plane forces. However, the problem comes in when we completely leave out the "higher" mental plane forces (which are of an imminently spiritual or holistic character). This again is an example of the explicit moral character of occultism, which will be discussed further in section three.

Thus, the force-field of the psychomagnetic force is in actuality the sum of the astral and (usually "lower") mental plane force-fields. Again, in terms of our subjective experience, this is the substantial and meaningful content of our emotions and thoughts, or, these taken together are expressed as our attitudes.

Now, there is a notion becoming increasingly popular about the nonlocality of mind, or of a "universal" mind that is not localized around particular physical bodies. For example, ideas endorsed by Ken Wilber¹², and Larry Dossey¹³ are along these lines, and often such concepts are presented in the context of nonlocality concepts from quantum theory derived from the EPR paradox. I've addressed this issue of quantum nonlocality elsewhere (at the beginning of chapter 6), but the point to make in the present discussion is that these authors are, whether they know it or not, describing the mental plane of the occultists. The mental plane is the sphere or world of ideation and cognition. But these authors make the mistake of thinking that the mental plane is universal, or absolute in some sense, and they do not seem to realize the literal reality of this plane as it is described from the occult view. The mental plane transcends the physical world and is much vaster than the physical in many respects, but compared to the infinite field of nested waves discussed in the previous section (which is absolute), the mental plane is but an infinitesimal sliver. Furthermore, these authors do not realize the nonphysical nature of the mental plane and how it is related to the other nonphysical planes. Nor do these authors speak of thoughts (thought-forms or memes) in terms of being objects of mental plane matter.

Once again, we are forced to admit that equivalent occult notions are superior than the notions coming from the present science/mysticism debate (as defined in chapter 2) as represented by the above authors. The occult, again, provides a detailed picture of the mental plane, and the precise means by which mental phenomena are expressed in the physical world. The mental plane is indeed the general field or milieu of cognition and ideation, and as such is "nonlocalized". But, in physical terms, each individual personality is a perturbation of this field, a vortex in this field that is definitely localized around a particular physical body (or astral body in

the case of a "dead" person). Our minds are our mental vehicles and they are definitely localized to the nonphysical "space" (or aura) in the vicinity of the physical body.

However, communication in the mental plane is not primarily a function of space nor time but of *intent*. Thus, mental phenomena are connected together not in terms of space or time, but in terms of intent. It would appear that mind is nonlocal in a quantum sense, but in actuality, mind operates under "communication" principles that do not allow us to draw an effective analogy with physical nonlocality, unless we want to assume that quantum particles also operate in terms of intent (which is probably not a bad idea). Again, turning to nonlocality and the EPR related issues is misleading in the present context.

Therefore, let us continue as we have, interpreting occult notions in terms of quantum processes. In this regard we are saying that the mental world can be thought of as a force field, and as such, it is the mental component of the psychomagnetic force. The mental and emotional components taken together make up the substantive content of our subjective experience, which is *literally* the psychomagnetic force. We package our subjectivity into "bubbles" of psychomagnetic force or meaning, and these are thought-forms. These thought-forms then serve as the means by which psychological and sociological events occur. Literally, these thought-forms are quanta, or discreet resonance patterns of the astral and mental fields. The fields serve as the medium or carriers of the thought-forms, the thought-forms serve as the means of communication within the psychomagnetic field.

We shoot, or emit, thought-forms out of the ecosystem that is our personality. The thought-forms that make up our personality cling together or hang together much like atoms do within molecules. They are fundamentally "in tune" with each other, and each serves to constructively reinforce the other. They are "bonded" together. Or in physics jargon, if the thought-forms bond together (within our auras) they are at a lower energy, hence more stable, than if they did not bond together. This is the essence of the ecological nature of systems of thought-forms. A community of thought-forms (be these an individual personality or an entire culture) will not accept a new thought-form into the community unless the new thought-form reinforces the group, exactly as an ecosystem of animals will maintain its stability in the face of changing circumstances. Or alternatively, a new thought-form can come in and overwhelm and modify the existing group, just as the introduction of a new organism into an ecosystem can potentially modify the whole food chain of a given community of organisms. Our minds operate identically, in terms of thought-forms, as groups of organisms do in a given habitat. Each of our personalities (and each society and culture) is a unique psychological habitat of thought-forms and emotional resonances, with its own internal integrity, and means of maintaining homeostasis.

Now, when two personalities come in contact, we have two ecosystems of thought-forms interacting. In this sense we can think of the personalities as "auras" or virtual clouds, each emitting into the surrounding nonphysical environment virtual quanta which are thought-forms, each of these carrying some value of psychomagnetic force (again, see Figure 6). No physical communication need occur, these processes operate spontaneously on nonphysical levels. Simply bringing two personalities (or auras) in contact will result in a field interaction between them.

This is the only level in which space proximity plays an important role in our psychological behavior. When two auras are in close spacial contact because their physical

bodies are as well, this emission and interception of "virtual" thought-forms occurs spontaneously. Potentially, this is a very important effect. For example, this is the nature of riots and mass events involving many personalities in close spacial contact. Depending on the size of the group of people, nonphysical mental resonances can be set up amongst all of the auras leading to mass behaviors that would not occur otherwise. Thus, conceptualizing the mind in terms of "nonlocality" (i.e. as Wilber or Dossey suggest) can be very misleading by missing this very important factor in mass behavior. Once again, the occult notions account for the widest variety of circumstances because of their penetrating conceptual clarity.

On a more personal and individual level, this space effect of aura resonance explains exactly why people give us distinct impressions whether we know them or not. This is because their thought-forms are being intercepted by our aura and we will react to this automatically. In contemporary culture this is often a very "subconscious" process. Most people are not aware of the subtle nonphysical resonances constantly impinging on their personality (or aura).

The greater implication of this process is that the whole concept of "privacy" is a myth in that one is constantly broadcasting their personality into the immediate nonphysical environment (via virtual thought-forms) and intercepting the broadcasts of the personalities who are in close proximity (either in close space proximity to the physical body, or in close "intent proximity" in the mental plane space). The only reason we are not consciously aware of this is because we are often too absorbed in the resonance of our own thought-forms to notice the thought-forms that we intercept from others. Again, there are exceptions to this, when we do get distinct "vibes" from others, or anticipate what a person is going to say before they say it. In this way, we are aware or unaware of the mutual nonphysical interactions with which we are constantly a part.

When the thought-forms emitted by one personality are resonant with the second personality to some degree, then to that degree an attractive communication or social interaction occurs. This resonance may be very weak or it may be very strong. But to whatever degree this resonance occurs, then to that degree a "social bond" is formed. *Social interaction or communication is literally the forming of a psychomagnetic bond between two or more auras.* If it is a weak resonance, then a transient bond is formed, but if it is a strong resonance, then a correspondingly stronger or more permanent bond is formed. To the extent a social bond forms, then to that extent the participating units are correspondingly more stable. This process is identical to how atoms interact amongst each other except atoms interact via the electromagnetic field..

And contrariwise, to the extent that two (or more) auras or personalities are dissonant with one another, then to that degree a repulsive communication or social interaction will occur. And the extent of this repulsion will determine the resulting mutual instability of the interacting units. What will result is an "anti-bonding" interaction that will force the units away from one another.

I want to make it clear that I am using the terms "attractive" and "repulsive" as a physicist would and not as these terms are used in our day to day language and discourse. Yet the common usage and the physicist's usage shed a mutual light on each other.

What determines the degree of interaction, or psychomagnetic bond formation between two personalities (or auras) is the total shared resonance of the interacting auras. Again, this is

an ecological situation. Two auras that are significantly different will only interact to a transient degree, because each aura is seeking to maintain its own integrity. It is possible for one aura to overwhelm the other aura and polarize it in the first aura's "direction". We normally think of this as "intimidation", but this is also the essence of being "glamorized". In either case, the effect is short lived and when the first aura stops exerting its influence, then the second aura will return back to its normal state.

When a very strong resonance is present between two auras (or individual personalities), then this means there is a constant transfer of psychomagnetic force (via thought-forms), and thus, a stable social bond is present. In this case we have a "social molecule" consisting of the two auras. The auras (personalities) are like atoms, and their exchange of psychomagnetic energy (or meaning) binds them into a greater unit.

In quantum physics a process called "renormalization" is described, and this means that, when two atoms (or any two quantum particles) interact, they are different than when each was separate. To be renormalized means that each unit is defined in terms of the greater whole of which it is a part. In modern chemistry this is described in a theory called "molecular orbital theory". What this theory describes is how the resonant structure of an atom changes when it is in the presence of another atom (or group of atoms). Each atom loses its own identity, so to speak, and adapts an identity that reflects the role it is playing within the greater whole of which it is now a part (a notably ecological concept).

An identical process occurs in the formation of social molecules. When two auras (or personalities) interact to form a stable social bond (via the exchange of meaning, which is psychomagnetic force) then these auras become renormalized. The nature of our interpersonal relationships is defined only in the particular terms of any given relationship. We are different people subjectively when we are in any type of relationship than when we are alone. To the degree that this is untrue, then to that degree the relationship is weak and insubstantial.

Social renormalization is the essence behind human communication. When we have effectively communicated with someone else, then we are psychologically different after the communication than we were before it. That is, *effectively* intercepting another's communication (via thought-forms of course) inherently changes us psychologically, changes the configuration of thought-forms that fill our mind. The degree and intensity of the communication determines the extent to which we change our psychological configuration. Either we know more, or know something different than before the communication occurred. Thus, to say, "Yes, I understand you," is exactly the same thing as saying "Yes, I renormalize with you." This issue of effective human communication was also discussed in chapter 10.

Now, another important factor we must consider at this point in our discussion of our ecological quantum psychosociology is the existence of large-scale thought-forms and their effects on individual personalities.

Up to now we have been using the concept of thought-forms on an individual and personal basis, and this is quite in line with the descriptions given by Besant and Leadbeater. They often speak of thought-forms in terms of those emitted or generated by an individual personality. Also, this is in line with Dawkins' concept of memes "jumping from brain to brain".

But thought-forms, once created, can maintain an independent existence for any given period of time (see chapter 11 for the details of how thought-forms are created and sustained).

If we construct a thought-form and put little desire or will (i.e.. psychomagnetic force, or in Theosophical terms; "elemental essence") into it, then it will dissipate soon and simply be gone. On the other hand, if we construct a thought-form and constantly feed it by repeatedly utilizing it or thinking about it, then the thought-form will grow in its power and lifetime and linger with us for an amount of time proportional to the energy we feed it. This is the nature of our habits. Habits are thought-forms that we repeatedly give energy to, making them stronger. And, in this case, they will react upon us in a *psychomagnetic* fashion (see quote by Annie Besant on page 188), of their own magnetic accord, to get us to keep feeding them. This is why habits are persistent and take definite energy (will power) to break.

When we have the situation in which not just one person is feeding a thought-form constantly and habitually, but many people are feeding this thought-form, then we have a case in which a vast thought-form comes into existence on the astral and mental planes. But even these can be transient, as for example when the world mourned about the explosion of the space shuttle, or the excitement generated in a movie theater by the audience while the movie is playing. These are examples of mass created, large-scale thought-forms, but since they are not habitually meditated on, they eventually disintegrate back into the astral and mental plane matter from whence they were formed.

However, if we have many people over long periods of time--generations or centuries--giving life to a particular thought-form, then what results is a *behemoth* thought-form of incredible psychomagnetic power. What are some examples of large-scale thought-forms? Any large-scale social institution is simply the physical expression of the vast large-scale thought-form that gave rise to the physical artifacts. Take for example the social institution of the Christian religion. Here we have a behemoth thought-form that has been continuously fed and given power over centuries and centuries. Such a thought-form is actually a vast *landscape* (or emotion/mind-scape, if you will) on the astral and mental planes. Likewise, consider the thought-form of "America". This too is a vast thought-form landscape of unbelievably great power on the inner planes. Thought-forms of this magnitude have profound effects on the physical world, leaving artifacts such as buildings, roads, altered landscapes, and altering the very shape (and perhaps fundamental nature) of the physical world.

These behemoth thought-forms have tremendous polarizing power over an individual personality. That is to say, these types of large-scale thought-forms can totally drown out the pattern of an individual aura and take over the aura to a very large extent. The red, white and blue flag waving and Star Spangled Banner marching band thought-forms of American patriotism can polarize our entire country under the right conditions (such as the recent "war" with Iraq). Or another example is the solemn cathedral and its stained-glass windows and high domed ceilings of the more illustrious catholic churches. These too are physical artifacts reflecting great thought-forms that can polarize individual auras into their meaning and mystique to an extreme extent.

Another set of thought-forms of tremendous polarizing power are those that make up modern science. The need to find legitimacy in the terms and definitions of science is a reflection of the polarizing power of the scientific thought-forms. These are by far the most powerful thought-forms existing on the astral and mental planes today. All of the authors I have discussed in this book: Leadbeater, Seth, Rudhyar, Einstein, Schrödinger, Phillips, and all the

rest are subjected to a very great extent to the polarizing power of the scientific thought-forms. I myself am subjected to this power, and this book itself is proof of the control of the scientific thought-forms over my own aura.

As a matter of fact, these types of large-scale thought-forms *create* the patterns of individual auras. Such thought-forms are obviously the basis for societies, cultures and civilizations. These types of thought-forms far transcend any individual personality. They serve as the overriding psychosociological framework within which individual personalities develop. And like any other form in Nature, these behemoth thought-forms have their nested cycles of existence, the seasons through which they pass, and these seasons correspond to the physical rise and decline of societies, cultures and civilizations.

When Richard Dawkins talks about memes in terms of "tunes, ideas, catch-phrases, clothes fashions, ways of making pots or buildings arches", he is describing these large-scale thought-forms. These are very different than the small-scale thought forms we emit out of our aura. Small-scale thought-forms could easily be imagined as "jumping from brain to brain" (or more precisely, from aura to aura), like an infectious disease. Large-scale thought-forms however, do not jump from brain to brain, or aura to aura, they are too big and too powerful. Large-scale thought-forms *mold* brains and auras, and *mold* the lives and experiences of millions and billions of individual personalities up and down the streams of history. If we wanted, we could call these "mega-memes".

What the existence of such large-scale thought-forms does is serve as a type of psychosocial "womb" in which personalities develop. These "mega-memes" are the psychosocial matrix within which we live our lives and from which very few people ever escape. The mystical experience, in large part, is the breaking out of this psychosocial womb or matrix, into a psychological realm of one's own unique identity. As a matter of fact, this is the true meaning of the phrase "to be born again". This breaking out of the psychosocial matrix of one's culture is indeed a rebirth into one's own unique psychosocial configurations. However, since Humanity is still so intimately dependent upon such large-scale social wombs ("mega-memes") due to the present state of cultural evolution, the truly reborn individual often encounters great psychosocial resistance and inertia from other auras that still operate within the definitions and confines of the psychosocial womb. Such ideas will be elaborated from other perspectives in the chapters of section three.

These large-scale thought-forms are indeed an ecological community, highly analogous to the great phyla of the biological world. Far-Eastern, Middle-Eastern and Western civilizations all represent vast conglomerations of large and powerful thought-forms, much like the biological kingdoms of plants, animals, bacteria and fungi represent diverse groupings of species. As each of these biological kingdoms is divided into many different grades or subdivisions such as phyla, class, order, family, genus, and species, so too are the behemoth thought-forms divided into many different sub-classes. There are vast civilizations extending over large periods of history (such as our own Western civilization). These civilizations consist of different but historically related societies. Each society is in turn made up of any number of cultures. The cultures themselves in turn are made up of sub-cultures. Like life in the biological world, these vast psychosocial divisions within divisions ultimately resolve themselves down to the living individual; a biological creature in the case of a biological community, or an individual

thought-form in the case of a civilization. In the human being, these two forms of evolution meet and occur simultaneously.

Now I am not claiming here that a one-to-one correspondence exists between the biological classifications and the nested structures contained in large-scale, behemoth thought-forms. What I am saying is that an identical organizing principle exists between the structure of biological life and the structure of human social systems. Richard Dawkins is completely correct in drawing analogy between cultural and biological evolution. These systems are structured in fundamentally the same way. This structure is the *nesting of cycles of organization within cycles of organization*. Such a structural organization is in some sense a fractal, was clearly described by Rudhyar, and is the basis for the nonphysical physics and geometry discussed in the previous two sub-sections. As well, this approach further emphasizes the ecological nature of the description of human psychosocial systems that I am describing here.

Now, we have one last topic to discuss in our model of "ecological quantum psychosociology". This is the issue; what does the community of thought-forms that dwells in our minds have to do with the brain of our physical bodies? That is, what is the nature of the "traces" left in our physical nervous systems by the nonphysical thought-forms that give content to our minds?

Actually, I have already described this process, or at least a certain facet of it, in the chapter "Biological Perceptions". In this chapter, the reason I referred to the little purple creatures (see Plates 11 and 12) as "meme-bacteria" is because they are the physical "trace" left by memes/thought-forms in our brains (or to whatever level of tissue or cellular organization they belong). These creatures form a very definite and structured ecological community at some level of our physical body's organization.

Because of methods I have developed (which I have not described in this book) to understand the structure of these creatures in other people, I have come to realize interesting things about these creatures and how they are related to the structure of an individual's aura (or personality). By some mechanism that is not clear to me (perhaps involving transduction pathways through the chakras and etheric body), these creatures are subjected to the nonphysical psychomagnetic force. This force works in conjunction with the lock-mold cycle (as described in "Biological Perceptions") and causes these creatures to polarize into extremely distinct patterns. If such forces were not present, then the meme-bacteria would be freely moving like a fish or a normal bacteria. However, as I described, they alternate between a free-moving state and a fixed or locked state. The locked states these creatures assume is highly dependent upon the structure of thought-forms in the aura.

What is interesting about this picture of neurological processes is that these creatures do *not* leave fixed artifacts in the tissue. The way the brain works is like drawing on a blackboard with chalk; when a drawing is no longer needed, it is erased and a new drawing made. The patterns these creatures form inside of our tissue is transient; from instant to instant they shift from one unique pattern to the next. If the patterns they form are highly similar from moment to moment, then this is indicative of habits or strongly polarizing thought-forms. That is, the patterns themselves are mostly a function of nonphysical factors (i.e.. the configuration of thought-forms in one's aura).

Now there are features of the meme-bacteria's behavior that seem to be genetic, that is, dependent on biochemical and physiochemical processes. First, is the number of and size distribution of these creatures; these factors appear to vary from person to person, but seem to be linked together. That is, an individual who seems to have a lot of these creatures also shows a large variation in the sizes of these creatures. People who have quantitatively less of these creatures seem to show a more homogeneous size distribution. The second genetic factor I have observed involves the structure of the green tubes through which the meme-bacteria swim. I have been able to infer that a range of tube types exists, from the very complex to the less complex, in terms of the complexity of patterns made by the tubes. As well, the tubes' lability (or their ability to break apart and reform) seems to be different for different people.

How these genetic characteristics relate to overt psychological behavior seems to be the following. Those who display a greater quantity and size range of the meme bacteria and green tubes tend to be able to operate at finer levels of thought and perception. Or more precisely, such individuals display in their physical waking consciousness finer qualities of perception and discrimination. A second factor about these genetic factors is that they are highly unique for a given individual. They seem to be a psychological "fingerprint" for a person.

In chapter 13, I speculated a great deal on how these meme-bacteria may be related to known concepts in neurophysiology. Those indeed were speculations. The above stated facts are inferences drawn from using indirect methods to infer the structure of the meme-bacteria community within a given individual's tissue. It is simply unclear to me at this point how my observations are related to what is known by genetic and neurophysiological methods. Nonetheless, the meme-bacteria are real and serve, at least in part, as the neurological basis connecting the physical and nonphysical components of our being.

Thus, we have now surveyed all of the important elements in our ecological quantum psychosociology. These may be summarized as follows:

1. Individual personalities (auras) are ecological (or molecular) configurations of thought-forms surrounding the Möbius ego point. Thus, the gestalt nature of the mind is due to the ecological organization of the mind's contents. These thought-forms are literally a symbiotic community in the human mind, and likely, in the minds of other species as well.
2. The interaction/communication of personalities (auras) involves the quantum field-like transfer of psychomagnetic (astral and mental plane) force via thought-forms. Such transfers, to some degree or another, result in either a stable social bond or an unstable (anti) social bond. Such transfer is a function of: 1. proximity in space, and primarily, 2. proximity of intent.
3. Large-scale thought-forms exert a polarizing effect over individual personalities (auras) proportional to: 1. the degree of psychomagnetic force contained in the thought-form, and 2. the degree of mutual resonance between a personality (aura) and thought-form.
4. The ability of the ego to break free of the psychosocial matrix of large-scale thought-forms is, in large part, the essence of the mystical experience.

5. Large-scale thought-forms form cyclic and nested organizations analogous to biological systems.

6. The physical brain and nervous system are polarized into *transient* patterns by nonphysical factors. The physical body serves the role as a transduction (energy converting) apparatus between physical and nonphysical energies.

This entire approach derives from a fusion of scientific and occult concepts. It provides a view of human behavior that is intimately grounded in concepts of the "hard" sciences. Human interaction is seen to occur via quantum interactions in psychomagnetic fields (the astral and mental planes), and the organizations that *evolve* in these fields have a nested, fractal-like structure identical to the organization of life in the biosphere.

Thus, through the utilization of occult concepts we have described principles of organization common to both the "hard" and "soft" sciences, and have therefore effectively destroyed this artificial distinction. A scientific interpretation of occultism indeed leads to a unified view of Humankind and Nature, one that can effectively explain the complex array of mechanisms and forms of organization that we see around us in ourselves and our real experience.

Furthermore, and what is fundamentally important, is that, as technical and far removed from everyday life as this model seems, its validity grows in proportion to one's understanding of it. And its fundamental use is to make the individual very consciously aware of the nonphysical forces that are impacting the individual during every single moment, whether awake or not. That is, these ideas are designed to empower the individual, and to increase the individual's own control over the forces constantly impacting her or him, be they physical or nonphysical.

This model explains human behavior in *exactly* the same qualitative terms that modern physics describes the behavior of the physical world. What this means is that the individual not only comes to understand him or herself better, but comes to better understand the nature of the physical world in which he or she dwells, thus making one more comfortable here in the physical world. These ideas do not alienate one from Nature, they bring one closer to Nature, by creating a sense of familiarity in the individual concerning all the levels in one's life and in Nature. As we become more aware of the subtle "as above so below" relationships that exist in Nature, we begin to feel a greater kinship and sense of identity to Nature in all of her myriad forms.

Notes: Chapter 14

¹Crombie, (1967), page 35.

²Shadow matter or "dark matter" is a concept currently in vogue in the physics community. Because of the mathematics used to unite the sub-atomic particles (i.e. the gauge theories that relate fermions and bosons), one is led to postulate a new form of matter that does not interact with electrical or nuclear forces but does react with gravitational forces. Thus,

"shadow matter" does not interact (or "couple") with photons, therefore we cannot see it. But its gravitational attraction can be felt, so therefore, in this sense, it is an invisible type of physical matter. Cosmologists are invoking this concept to explain why the gravity interactions we observe are not consistent with the actual amount of matter we can observe. We observe less matter than we would expect based on gravity effects. Thus, cosmologists postulate that there must be large quantities of "shadow" or "dark" matter to account for observed gravity effects. One other feature of this "shadow matter" is that it interpenetrates the matter that we see with our senses. There is no question in my mind that "shadow matter" is exactly what occultists call "etheric matter". Leadbeater clearly described the existence of etheric matter as the higher order grades of matter of the physical plane. Physicists have finally discovered the etheric matter of the occultists.

³For an exception to this statement see Francis, (1982)

⁴For an intermediate level discussion of "Theories of Everything" see Williams, (1991), chapter 13.

⁵Personal letter from Dr. Phillips dated July 13, 1987.

⁶Leadbeater, (1986), page 7.

⁷Watts, (1966).

⁸Leadbeater, (1986), page 41.

⁹Leadbeater, (1984), page 19.

¹⁰I do not agree with Dawkins that the cultural behavior of other species are "just interesting oddities". This attitude to me is the most snobbish form of anthropocentrism one can display. It seems to me that by understanding the cultural behavior of other species, we may come to better understand how to actually *communicate* with such species.

¹¹Dawkins, (1976), pages 203-206.

¹²Wilber, (1982).

¹³Dossey, (1989).

SECTION THREE: Putting It All In Perspective

This final section is a group of independent but interrelated essays. Taken as a whole, they are meant to put what has been discussed in the previous two sections in the greater light of our actual and real experience as human beings. The repeating theme of the following discussions is that which is expressed in the following quote by Rudhyar, yet each essay addresses this idea from a different point of departure. And this theme can roughly be stated as follows: that no set of ideas can ever capture the totality of our living experience as human beings and no matter how we see or define ourselves, no definition can ever take the place of our actual and living experience.

"We are living in a psychological century in a time of total revolution and hopefully, at the threshold of a new age in which individuals will be able to encounter openly the universe and all experience *without intermediaries* forcing social, religious or ethical categories upon them."

Dane Rudhyar, *The Sun Is Also A Star*, (1975)

Chapter 15. Occult Morality

The irony in our society regarding occultism is that it is associated with a generally negative image. This is ironic because the essential teachings of occultism possess an approach to life that is more integrated and harmonious than the common ways and beliefs of our society. As we have seen, occultism teaches that humans are integrated wholes with an important and necessary part to play in the overall scheme of things. As one learns more and more of occult teachings and insights, an alien familiarity begins to creep over one, a sense of awe and wonder at oneself, at Nature and most especially at the generally backwards condition of the mass of the human race.

We have already discussed the fundamental ethical differences of the occult and scientific world-views. I hope to have illustrated that occultism is fundamentally a participatory intellectual approach to the study of Nature and Humanity, and is grounded in a primarily ecological approach, and also explicitly defines its ethical orientations. On the other hand, modern science, which has its historical roots in the Western dichotomy of "being or becoming", has the implicit metaphysical orientation of separating Humanity from Nature. Modern science, as it presently stands, implicitly operates under the assumption that Mankind, in some respect or another, stands outside of Nature, and modern science believes that it can describe the operations of Nature without taking into account the fundamental human element.

This presents a problem in that, as I have also described, modern science is the fundamental creative force in the modern world. Not only does modern science create the technologies that have transformed the world, but as well defines for us our image of who and what we think we are. In the terms laid out in the previous chapter, modern science is a behemoth aggregation of thought-forms forming vast emotion-scapes and mind-scapes on the astral and mental worlds; psycho-scapes that literally mold the personality of the modern individual. This vast aggregation of thought-form that constitutes modern science is the essential psychosocial matrix within which our everyday lives occur. Thus, even those people not directly involved in the activities of modern science are affected by the results and orientations of modern science. The implicit metaphysical assumptions of science have filtered into our everyday lives in a ubiquitous fashion, and thus, the entire spectrum of life styles of the Western world are colored by the hidden metaphysical assumptions of science.

But the scientific thought-form(s) itself is only one of many vast thought-forms that affect and define our lives. It coexists among many other vast thought-forms such as modern nationalism, modern religion, modern art, etc.. All of these thought-forms form a vast psychosocial community, or ecosystem, each supporting the other in an ecological give and take that supports the entire psychosocial framework behind the modern world. It is this tremendously vast mind-scape that polarizes and molds each of our individual minds and personalities, affecting not only our beliefs and attitudes, but our entire physical life.

In this chapter I want to discuss this complex and powerful arrangement of thought-forms, not from an intellectual point of view that is abstracted from our actual experience, but in

terms of the social realities that surround us. I want to go into the moral overtones implicit in this vast network of thought-forms that define our present social behavior and attempt to understand these attitudes from an occult perspective. The following discussion is a critical social commentary of present day life-styles as seen from an occult ethical orientation. I have written this from the point of view of being "inside" this system of thought-forms; this is my personal perspective on what I see going on around me today in the world we all share. My words may seem harsh, but I am pointing the finger at no person, only at thought-forms. We humans are the medium through which cultural evolution occurs, because we are the ultimate carriers of culture, of the ideas, memes or thought-forms that allow us to bring life to the abstract levels of being embodied by cultural evolution. A thought-form may be vast and powerful, but it has no life if we do not give it life. We have the inherent power to create our collective social reality by allowing the survival of some thought-forms and not others. The following discussion is indirectly an attack on the thought-forms that I feel serve no useful purpose in our lives and serve only to make our lives less than they could be.

The essential question here is one of values. What is the value of life? Of a human life? We are raised as children in our culture to believe in a set of values that, when we actually become adults we find are little more than a veneer to mask the ugliness, hypocrisy and delusions of our social values. We are taught not to lie, to be nice and kind, to be charitable. But as we grow older we really only learn repression and confusion, fear, dishonesty and disrespect. We become great liars and self-deceivers. Our minds and hearts are fed by the useless images of a decadent media and we become trapped in expectations that we can never live up to. We are subjected to a corrupted authority that abuses the public trust and forces us to be like sheep out of fear of punishment. We are not taught to think for ourselves in our schools, but to think like each other, to conform or be cast out. Our society has no compassion, for it breeds crime then puts all of the responsibility upon the criminals. Our institutions are like parasites, each feeding on the others, resulting in a stress producing life-style that leads us to cancer and heart attacks. The result is a breed of humans which is essentially bland and colorless, selfish and dispassionate, an uninteresting and pitiful blend of phobias, repressions and useless misinformation; the average market place consumer with his store bought opinions, trivia filled mind, and need to think he is getting away with something and is better than everyone else.

We espouse religion, we espouse God, we espouse moral values. But they are only token espousals, mere lip service paid to things in which we neither believe nor understand. Ours is a society without a healthy spirituality and with no reasonable comprehension of the need of true moral values. Our churches are little more than guilt and phobia-creating centers with their arbitrary and mostly detrimental concepts of right and wrong. You cannot blame the average person for their lack of interest in the church. But where does the average person turn instead? To the authority of the media, or the universities, or the profession, or the government, or perhaps some New-Age cult; out of the frying pan and into the fire. Our secular institutions have only a self-perpetuating need that breeds a negative type of morality; a morality that says "look out for number one", a morality in which the abstract institution becomes more important than the real people who *are* the institution. In this climate, human life is little more than a

dispensable tool for heartless institutions. Yes, our society has morals, but they are the morals of the spiritually ignorant.

In occultism, morality is of the greatest import. The vast bulk of occult teachings are in some respect or another related to the development in a positive and constructive manner of the initiate's character. The morality of occultism is not arbitrary, it is founded in logic and necessity. If one does not want to burn their hand, then one does not put it in the fire. Occultism teaches that it is the same with psychological events. If one wants to understand truth, then one must learn to tell the truth; one must develop the necessary discrimination to tell *what* is truth. In occultism, morality is taught to be psychological hygiene. Just as we are taught to keep ourselves and our food clean so as to stay physically healthy, occultism teaches that we must keep our minds and emotions clean and not feed ourselves unclean ideas and emotions, so as to keep ourselves mentally and emotionally healthy.

The purpose of occult teachings is ultimately the healthy and constructive integration of the soul's personality in physical life and the lives that come after death. Occultism is in theory a reaching out and participation in the vaster arena of Life of which Humankind is a part. It teaches of the processes of our minds and emotions with the understanding that these are tools that we as souls need to use to fulfill the destiny of the human cause, so it teaches how to use these tools correctly. Our souls are not human, but they assume human form and in doing so experience what could not be experienced otherwise, and as well contribute to the necessary process of human evolution.

In our culture, evolution is conceived of as primarily a physical process. But this view is so incomplete as to be completely wrong. Ultimately evolution is a spiritual and psychological event, using psychological in its broadest possible sense. The universe is breeding a level of conscious awareness and activity through the human species that, in our present form, we cannot even conceive of. Yet the essence of this process depends on the natural and healthy integration and expression of the soul within physical experience. This is the essence of the Hindu concept of "dharma", a word for which there is no counterpart in our culture. It is each soul's dharma to play a fundamental and important role in this universal process of spiritual evolution.

Because we only believe in that which we have very arbitrarily defined as physical, it is difficult for us to accept the idea that evolution is spiritual. We conceive of evolution as occurring in physical processes that span millions and billions of years. In the scope of these processes, each individual human--you and I--are only incidental little blips without much meaning or import. Thus, in the context of our actual lives day to day, we do not see ourselves as important and we do not treat each other as important, and we do not treat the Earth or other species as important. The feeling underlies our cultural beliefs that we are transient and that "you only live once", and so we seek in a frenzied sense of urgency to feel all we can, to do and see all we can, and to acquire all we can in this brief few years of physical life we have been granted for some reason that no one really knows. And what we think is our sense of self-importance is little more than a defensive front put up to protect an ego that is essentially insecure and hasn't the slightest idea of what it is doing or of what is going on here in physical life.

Our lives are essentially miserable; one circus side-show act after another. We build our expectations so high, only to be utterly let down when we find that what we have acquired is essentially empty and devoid. This is a feeling very commonly experienced in our society, yet we rarely admit to the experience. Instead we bend our faces in fake smiles and make up excuses and rationalizations. "Good answer, good answer" as is said on that popular game show. The trip to Hawaii, the new car, the pretty girl, the out-of-body experience, none of it is really what we thought it was going to be. So instead of trying to figure out what is really going on here, we move on to the next desire, the next expectation and the next purchase, and the cycle repeats again. This is what the Hindus call "Karma"; the useless repetition of an event until we learn to no longer do it. And this emptiness we feel as we live through all of our disappointing expectations is grounded in the fact that *these things do not feed our souls*. If our soul is not being fed in a healthy way, then we are empty and unhappy. We can lie to ourselves and tell ourselves that our new Porsche, our home in Burbank, the new cult we have just joined, the beliefs that we are fervently espousing are all we ever wanted, and that this is good, and that, at least we're doing better than the Jones's; but this is all mere superficial rationalization. This attitude and approach to life that I am describing is poison to our minds and emotions. It is unhealthy and unclean and all that comes from it is unhealthy and unclean. This attitude is a vast ugly set of thought-forms that has accumulated throughout the ages and that serves human existence no purpose except to trap souls in their own folly.

From an occult point of view this attitude and approach to life has very real and definite impacts on the occult physiology of the human being, and thus on the physiology of our physical body as well. The diseases in our society are primarily the result of our unhealthy minds and emotions. Cancer, heart-attacks, AIDS, stress, depression, and even degenerative psychological diseases such as Alzheimer's disease rest not in physical causes but in mental and emotional causes. It is the way we live our lives, the values by which we live our lives, the meanings that we give to life in general, and our life as humans that creates these diseases. These diseases are not simply physiological occurrences unrelated to our states of mind and emotions or the values and structure of our society. These diseases are *caused* by the way we live our lives, by the way we see and conceptualize our lives. Since these are very strong statements let me explain what I mean in some detail.

Occultism is the opposite of modern medical science in that occultism teaches a top-down kind of cause and effect between mind and body, whereas modern medicine takes the opposite view. Occultism teaches that, primarily speaking, the mind controls the body. Most occult practices in yoga deal with the control the mind can exert over the body; sitting in asanas (postures) to still and control the body, learning to control one's heart-beat, walking on burning embers, being able to go without food and oxygen for weeks. These things are well documented¹, even here in the West, and they are real. People can gain such control of their physical body by practicing the correct exercises.

Medicine teaches the opposite, that body controls the mind. Actually, it never directly says this because modern medicine has no clear means of understanding the relationship between mind and body. But in their ignorance, doctors prescribe drugs like Valium to calm the nerves, or lithium to ease the emotional swings of manic depressives.

Actually, both the occult and modern medical approaches are correct to some extent. And I think that a good doctor would not disagree that a healthy attitude and life style is important for a healthy body (notice I said "healthy" and not "sterile"). However, I do not think many doctors would point to our whole society and its values as the effective cause of most diseases in the affluent nations. They would have too much to lose.

But generally speaking, each takes an opposite stand on this matter. I think it is obvious when one looks into this issue that there is a definite feedback and mutual kind of *sharing* of control between mind and body, though I lean more on the occult side that ultimately the mind can exert a stronger control over the body, at least in the normal individual. If this wasn't the case then it would be impossible to quit smoking for example, or to force oneself to stay awake when the body is ready for sleep.

But the issue is much more subtle than such examples indicate. When we begin to talk about attitudes, social values, life styles and how these affect health and the behavior of the physical body, then we come into an arena of discussion where modern science and medicine are relatively impotent and we must turn to notions of occult physiology to clarify the issue. And in doing so we inherently show how occult morals are intimately grounded in a logical and necessity oriented framework. We begin to see just how our moral attitudes (actually all of our attitudes, for any attitude *implies* a moral posture) affect not only the health of our physical bodies, but the health of our personal relationships and society as a whole, and ultimately our happiness and security as human beings.

To understand the relationship between society, morals and physical health we must turn again to the notion of man's nonphysical bodies, the chakras and the use to which the kundalini energy is put.

Let us begin by considering the "ideal" case for a normal individual. Ideally, for a normal person of average perceptive ability, intelligence and emotional disposition, the Kundalini energy is distributed relatively equally throughout the chakra systems. Thus there is a healthy flow of vital life forces not only through the physical and etheric bodies, but through the astral and mental bodies as well. The three lower chakras are involved primarily with regulating the body's autonomic activities, so this individual would have a healthy functioning body. His sexual activity would not be hyper-active and he would not be ill often either. A decent flow of kundalini through the heart chakra would produce in an individual the ability to be conscious of his own emotions and those of others to a degree that would allow him to cope effectively in interpersonal relationships. As well, he would have a good sense of right and wrong, quite intuitively. A healthy flow of kundalini through the throat chakra would allow the individual to listen and hear effectively what others are saying to him, that is, he would possess an effective ability to communicate with others. The extent of his empathy with others would of course depend on the degree of coupling between the heart, throat and brain centers, which is assumed to be adequate in this case. The flow of kundalini into the head chakras, the third eye and crown chakras, of a normal individual would produce a bright and creative individual who could easily learn and apply information in problem solving tasks in all walks of life. As well, his dream life would be normal in that natural biopsychic functions would be carried out effectively. Such an individual as this would not display any abnormal psychic abilities but would possess them to a very minor degree if the need arose, though he would be unaware of this fact and use

such gifts quite unconsciously and instinctively. All of his bodies, physical, etheric, astral, mental and buddhic would be capable of effective communication and resonance amongst themselves. Thus we would have a healthy, well-balanced and highly functional individual human being at both physical and nonphysical levels.

This is a description, in terms of occult anatomy, of the healthy flow of life energies in an individual at the present stage of human evolution². However, this is very much an ideal case, and many external or internal forces and factors can impact on such an individual to cause deviations from the ideal pattern. Deviations can include 1. changes in the relative amount of kundalini energy to the various chakras, 2. changes in the coupling or interaction amongst the chakras within a given body or amongst the chakras of the various bodies, and 3. changes in the couplings amongst the various bodies themselves. Internal factors that could cause such deviations would be: 1. genetic programming deficiencies in the physical body, or 2. the equivalent thereof in any of the other bodies³. External factors that would create deviations from the ideal type include: 1. social patterns (i.e. thought-forms), 2. unhealthy physical, emotional, mental and spiritual environments, and 3. bad attitudes on the part of the individual, that is, unhealthy reactions to circumstances, adverse or otherwise.

Thus, with this description in mind let us look specifically to our society (i.e. the thought-forms that mold our minds and lives) and the types of individuals it produces, attempt to ascertain what the typical occult anatomy would be for the average individual, and see if this sheds some light on the disease states commonly found in our society.

In general, ours is a society of excess, and from an occult viewpoint this implies the *over-stimulation* of the lower chakras. The lower chakras have to do with sex and natural body functions. The over-stimulation of the lowest chakra (the muladhara chakra) produces hyper-sexual behavior, which is very common in our culture. The sexual allure and glamor of the marketplace and media attest to this fact. And even if we as individuals do not react consciously to the hyper-sexuality of our society, that it exists to the degree it does creates a vast background noise in our subconscious (or on the astral and mental planes, if you like) that will affect our personalities and our lives anyway.

Our culture has blown human sexuality way beyond any reasonable proportion, primarily because of arbitrary attitudes as to what is and what is not proper sexual behavior. This is an extremely bad situation to be in because our sexual energy is the most primitive and strongest creative urge that our souls are subjected to in physical experience. Thus, through our cultural attitudes, we have created a "keep your hand out of the cookie-jar" mentality towards sex that has the effect of repressing our natural sexual desires. This in turn creates the opposite effect, instead of curbing sexual desires, we have enhanced them by associating an unnecessary mystique and allure with sexual behavior.

So sexuality is viewed out of its natural proportion in our culture, but we antagonize this effect with our cultural attitudes of what is right and wrong sexual behavior. The association of marriage and sexuality in a heterosexual context is only a valid approach for those who are naturally oriented in that direction. Obviously the implication here is that some souls have other sexual preferences that transcend contemporary cultural definitions. However, in most cases in contemporary society, pathological sexual behaviors result as an unconscious counter-response on the part of the pathological individual to unhealthy or unbalanced social values (see the Seth

quotes on page 77 in this regard). If we could see the true underside of our desires with regard to sexuality, then it would be apparent that present social norms concerning sexuality are very unhealthy for individuals, even though these norms are a highly efficient means of maintaining the status quo. The bottom line is that, within our society, there are a million confused attitudes about sexuality; The guilt and insecurity of the homosexual, the warped and strange need of the child molester, the ugly smugness of the pornographer, the desperate need of the prostitute, the strange repressed urges of the school teacher, the murderous attitudes of fatal attractions.

From an occult point of view, these are the thought-forms that populate vast regions of the astral and mental planes. We may think we mask and hide these feelings in our day to day life, but they are as clear as day and right out in the open on the inner planes. And it is a sickening sight to behold because it is one vast heap of negative emotions and images, a terrible blend of confusion and desire. And even those people who do possess normal and healthy sexual behavior are trapped within this greater matrix of sexual confusion. In terms of our occult anatomy, the primary effect of this situation is that the vast bulk of an average individual's kundalini energy passes only through the muladhara chakra and thus, little gets to the higher functions.

The overall possessive and jealously competitive mentality of our culture is also a function of the lower chakras. This has to do with an over-stimulation of the chakras associated with digestion. The possessive and jealous attitude of our culture is a reflection of our physical body and its hunger. But it is a craving that is all out of proportion to any actual and healthy need. Naturally, we need to eat, but gluttony is an unhealthy state. Through our attitudes we amplify our body's tendencies, and it is through our attitudes that we have amplified our body's need to eat way beyond any reasonable proportion.

Not only do we crave, crave, crave, be it physical possessions or sensory stimulations, but we have no appreciation for the things we crave. Ours has become a fast-food society of disposable goods, raping the Earth's resources for transient and useless needs. It is not that craving is bad (actually, it is a very natural part of our psyche), it is when we do not appreciate what we have consumed that the problems begin.

Thus, from the occult standpoint, not only does most of our kundalini energy channel through the sex chakras, but the bulk of what is left is siphoned through the spleen and navel chakras.

This lack of proportion and over-stimulation of the lower chakras in our society is primarily due to our culture's spiritual ignorance. In other cultures, there were always taboos against this type of self-indulgent behavior, and these taboos served to check the flow of kundalini from the lower centers and make sure that it was distributed equitably throughout the chakra system.

But in our culture today, there are no more taboos, we are spiritually ignorant as well, and there are no true priests or initiates guiding our cultures, so all our kundalini goes into the lower functions of the chakras. The morality of the Christian church, to love thy neighbor and to turn the other cheek, the Ten Commandments, these were moral prescriptions that, if followed effectively, would help to ensure a healthier energy balance amongst the chakras than if not followed. But though we pay lip service to such ideas, the individual who tries to live by them is rare. Even if one wants to live up to such notions it is very difficult because no one else does,

and so to live by such ideals, one sets himself up to get eaten up by the system, he is naive. These are the kinds of circumstances that result when a society is ignorant of occult realities and moral truths. The fear of God is not the fear of being spanked and scolded by the big boss in heaven, as the religious beliefs of our society seem to imply. It is the fear of upsetting Nature's balances and the destruction that we then bring upon ourselves.

Because of our beliefs, we put all our energy into the lower three chakras, therefore none goes to the higher functions. What this means, practically speaking, is that we sell ourselves short of our humanity. When all the energy is in the lower chakras it produces insensitive, crude human beings. If little energy goes to the heart center then we are equally low on the qualities of the heart chakra, compassion and sympathy. If we stifle our throat center then we lose the ability to listen and understand others. If we stifle the head centers, the third-eye and crown chakras, then we never come to see and understand what is going on around us, and we are then mostly confused or preoccupied by sensationalism and trivia (the reductionistic mentality of modern science is interesting in this regard). When all of our energy goes into the lower centers all becomes sex, food and possessions --crude and unrefined because these things are not seen in their true spiritual light. Our lives become the violence of the digestive system instead of the smooth rhythmicness of the heart or the infinite subtlety of the brain.

Through such imbalances caused by our spiritual ignorance we live out our physical lives in the late twentieth century. And these imbalances are reflected not only in our life styles but in our physical bodies as well. And we have to live with AIDS and cancer, heart attacks, and obesity, all symptoms of imbalances in the body. Cancer, when the body eats itself because the ego is confused; AIDS, when the body attacks itself because the ego is confused; obesity, when the body grows all out of proportion because the ego represses its energy and produces accumulation; heart attacks, because the ego is so wound up with anxiety that the heart explodes.

And because our culture does not promote a life style that feeds the higher centers, these get warped and distorted (or more precisely, polarized) by the lower centers that are taking most of the energy. So our heart and rationality become atrophied and confused. What we think is compassion is only a feeble charity that serves to pacify our latent guilt, a guilt about something we don't quite understand. What we call love is usually but a jealous possessiveness. And the qualities of the third eye and crown chakras, logic, rationality and discrimination as well become atrophied. What we call logic and rationality are little more than mere word games with no substance of any kind, and are, in actuality, only preoccupations with details that are meaningless when seen within the entire scope of our lives. And we produce knowledge and sciences that are slaves to our barbaric need to control and conquer. It is not that we are like animals, for as Charles Darwin pointed out, no animal is cruel and malicious, only humans are. Our primitiveness is not because of our animal instincts and passions as Freud thought. If we were open to our animal instincts we would be as graceful and beautiful and balanced as the animals are. No, we live an unbalanced life because we have unbalanced attitudes. The ugliness of human existence is a purely human creation; it is the product of human imbalance on all of the levels that define a human being.

Because of our social values, we are trapped in a cycle of negative feedback; since our hearts and minds are atrophied to begin with, our solutions and responses from these levels are mostly confused and inappropriate, and so we only bandage over the symptoms of our problems instead of seeking fundamental causes. Thus nothing is ever solved and the problems only compound. Situations that would have been easy to solve had we only looked at them right to begin with, grow all out of proportion until we are suffocated by them. Then we become stifled and cannot move, and this makes us become lazy. We become lazy intellectually, we become lazy emotionally. We are too used to the ready-made and disposable commodities of the fast-food market place and we exert no real and substantial effort. We think it is easier to fall into the grooves and let the chips fall where they may, but we don't seem to realize that we are making it much more difficult for ourselves than it needs to be. Life itself is effortless and graceful. Life is the blowing of the wind and the flowing of the water, the effortless peace of the forests and the fields or raging of storms and tornadoes. Nature itself is the ultimate example of healthy moral values.

The problem is that we are only ten thousand years out of the jungles. And the deep rooted species memory of being prey for other creatures still haunts us deep at the root of our present awareness. And we have stepped out of the physical jungle into the psychic jungle of our minds and emotions, which is an even more terrifying situation, because here we create our own bogey-men. We must come to learn and realize that we are no longer creatures of the jungle at any level. The image of "the jungle" itself is an image that exists only in our minds, it is an image that is a portrayal and projection of all that we fear inside ourselves. And we fear to look at ourselves for what we really are in the innermost depths of our being: We are conscious and creative human beings on the surface, but in our deeper fate we are the creations of Nature destined for Godhood.

We think that outer space is vast; uncountable light-years filled with a myriad of uncountable giant burning suns, tremendous and overwhelming super novas, the unfathomable depths of black holes. And as well we think that the physical time in which evolution has occurred is vast. In our physical life we are overwhelmed by the scales of space and time that we as a species have only so recently come to be aware of. We project into these images of space and time what is really ourselves. We are fooled by time and space for they are only mirrors in physical experience of the true cause. And the true cause is *intention*. Intention is the root of our subjectivity, the root of our being. And the millions of years we sense in the Earth and the uncountable light years we see in outer space are only a reflection of the vast and deep intention that is the foundation of our being.

We need morals now, morals that will reawaken the spirituality we know now in the vast depths of our unconsciousness. We need morals that will lead us to a conscious spirituality; a sense of wonder, a sense of belonging, a sense of unity, a sense of appreciation and respect, a sense of our vast creative potential on so, so many levels of reality, and most of all, a sense of friendliness to ourselves and that part of ourselves that is Nature. The best images of the best gods are only our desire to be the best we can be. If we could only stop projecting these images into myths and fantasies, and begin living out these images now and today, through healthy attitudes of joy and appreciation, then we could create human lives of such unbelievable beauty that we would not even recognize them as human.

Notes: Chapter 15

¹See for example Taimini, (1967) and Wood, (1976).

²This qualifier, "at the present stage of human evolution", had to be added because it wasn't always like this with humans and it won't be like this forever. A big part of the occult concept of human evolution rests in understanding the energies involved in the occult anatomy of man. The whole pattern of man is in a flux and transforms substantially over periods of time (in physical terms) or, equivalently, over periods of intent (in nonphysical terms).

³In a sense there are genes for the etheric, astral, mental and buddhic bodies, but this is a very complicated occult topic on which not too much is really known. Leadbeater for example speaks of "permanent atoms" in his writings. But it is unclear to me how such notions fit into the things I am writing about in this book. Thus, I only include the idea here for completeness' sake. For more details see Leadbeater, (1987).

Chapter 16. Intellectual Pretension

Thoughts That Come To Mind When Reading Chapter 6 and Its Associated Commentary of *The Book Of Lies* by Crowley.

Outside of occult circles, Aleister Crowley's *The Book of Lies* is little known. Nonetheless, it is probably one of the greatest intellectual achievements of the twentieth century. Crowley fancied himself a great writer of poetry, fiction and various treatises pertaining to magical and occult topics. Unfortunately, he wasn't really that great. One gets the impression from reading his works in conjunction with his various biographies that most of the time he projected his fantasies of being a great artist into his works as a kind of emotional compensation for his deficiencies on other levels. Taken as a whole, Crowley's literary output is at best mediocre, in literary terms that is, not necessarily in other terms. This makes his *Book Of Lies* all that much more interesting. Compared to his other works, *The Book Of Lies* is a diamond in the rough. Not only is it a fantastic literary achievement, it is as well an extraordinary philosophical work conveying insights so far in advance of the twentieth century intellect that the book is mostly meaningless to the modern mind.

The Book Of Lies consists of 91 one page chapters written in verse form on the left hand side of the page. On the facing right hand page he provides his own commentary of each chapter. The depth and subtlety of the book simply cannot be described. Each chapter is rich in meanings on many levels and each reading leads to new discoveries and insights. In this essay I would like to focus simply on one chapter from *The Book Of Lies*, chapter 6, and give the thoughts that are stimulated in my mind by both the chapter and his commentary.

Chapter 6 of *The Book Of Lies* is simply called "Caviar", and is so short it can be reproduced in full here:

*"The Word was uttered; the One exploded into one thousand million worlds.
Each world contained a thousand million spheres.
Each sphere contained a thousand million planes.
Each plane contained a thousand million stars
Each star contained a thousand million things.
Of these the reasoner took six, and, preening said; This is the One and the All.
These six the Adept harmonized, and said: This is the Heart of the One and the All
These six were destroyed by the Master of the Temple; and he spake not.
The Ash thereof was burnt up by the Magus into The Word
Of all this did the Ipsissimus know nothing."*

His commentary is then:

"This chapter is presumably called Caviar because that substance is composed of many spheres.

The account given of Creation is the same as that familiar to students of the Christian tradition, the Logos transforming the unity into the many.

We then see what different classes of people do with the many.

The Rationalist takes the six Sephiroth of Microprosopus in a crude state, and declares them to be the universe. This folly is due to the pride of reason.

The Adept concentrates the Microcosm in Tiphareth, recognizing an Unity, even in the microcosm, but, qua Adept, he can go no further.

The Master of the Temple destroys all these illusions, but remains silent...

In the next grade, the Word is re-formulated, for the Magus in Chokmah, the Dyad, the Logos.

The Ipsissimus... is totally unconscious of this process, or, it might be better to say, he recognizes it as Nothing, in that positive sense of the word, which is only intelligible in Samasamdi."

And thus is chapter 6 of *The Book of Lies*. Crowley is actually quite clear about what he is trying to get across, however, much knowledge is assumed on the part of the reader. I am not interested in attempting to analyze this material in its entirety, for this would take us far afield from what I personally get out of this chapter. And so it is my personal interpretation that will now be discussed. It is interesting to note though that the number six plays prominently in this chapter, the chapter actually being a statement on the numerological meaning of the number six. The numerological meaning of six is incompleteness.

Like anything else, one walks away from art (literature, in this case) with what one sees in it. And what one sees in a thing is grounded in one's interests and preferences, but at a deeper level, in one's needs and capacities. And so it is with my interpretation of this chapter. What I see here is Crowley describing reality in terms of worlds, spheres, planes and stars and things. If we add up all the worlds, spheres and planes, etc., this gives a total of 1×10^{45} objects within the "Many", the "microcosm", or I would prefer to say within the physical plane. Crowley's figures are comparable to the kinds of numbers scientists use when they talk about such things as the number of stars in the universe, or the total number of atoms, or the number of nerve connections in the human brain. However, I am sure that Crowley is meant to be metaphorical here and not literal. Likewise, his description of "Creation" sounds very much like the present day picture of the "big bang" theory. Considering that this was written in 1913, and the first big bang model can be attributed to Alexander Freidman circa 1922, one would have to wonder where Crowley got his facts.

But in spite of the similarities of his view of creation to the modern scientific view, what jumps out at me in the chapter is the line:

*"Of these the reasoner took six, and, preening said:
This is the One and the All."*

And even in his commentary he says, "This folly is due to the pride of reason." There is a wisdom here that is little understood in the contemporary intellectual world. What Crowley calls "the folly due to the pride of reason", I see as the pretension of the intellect. A little bit of knowledge is a dangerous thing. That one sees six things among many, many, many trillions of things, and declares those six to be the "One and All" is not only foolish and unwise, but smacks of delusion as well. It is so common for intellectuals to have such an attitude today that one wonders what it is that is really behind such an attitude.

The issue does not so much revolve around intellect or reason per se, for these are simply functions of the mind. It is the pride and pretension that surrounds the intellect that is the real issue. Where do these come from? Does reason imply pride, does intellect imply pretension? A similar question is "Does fire imply murder?" In a sense it does, one can use fire to murder, but as well one can use fire for lots of things other than murder. Most likely, it is a similar case with pride and reason. Reason implies pride and pretension, just as fire implies murder, but likewise, reason implies much more than pride or pretension. What I am saying is that reason and intellect are not obligated to be associated with pride and pretension. But still, in our culture they are associated to a dangerously high degree.

We have scientists who will take their pet discovery in whatever their narrow, specialized field and stand and proclaim "Yes, this is it! This is God's divine plan of Nature!" There is no need to even mention names, labels such as "Grand Unified Field Theory" make the point quite nicely. With a handful of mathematical equations and obscurely abstract concepts, modern scientists will proclaim that they finally have Divinity in the palm of their hand, or at least programmed into their computers.

In this respect, Crowley's statement in his commentary is relevant:

"The Rationalist takes the six Sephiroth of Microprosopus in a crude state, and declares them to be the universe."

This statement is rich in cabalistic symbolism which it is not my purpose to dwell upon here. What this statement roughly translates to is: The rationalist takes the material world of his senses, and declares this to be the totality of all that is. Indeed this is the case. Things haven't changed much since 1913!

Obviously Crowley was addressing the blatantly materialistic mind set of his day. But in spite of advances in science, especially relativity theory and quantum theory, the essence of materialism has not changed, it has only grown subtler. The matter, time and space that were once taken to be so real by the nineteenth century materialist have been exorcised by these two theories only to be replaced by abstract mathematics and obscure intellectual notions. The outer garments of materialism have changed but the essential attitude still remains. It is essentially an attitude that is flippant in the face of religious and metaphysical realities, denying these because they cannot be weighed, photographed or measured. The implication in Crowley's comment is that the rationalist is simple-minded, or "crude" as he says, about metaphysical matters.

There has in the West for the past 400 or so years been a strange preoccupation amongst scientist of trying to one-up and second guess God. Not only is this pretentious, it

seems a little neurotic as well. Granted that modern science has its historical roots as a counter response to a scholastic and overly rigid medieval Church, but one would think that 400 years is enough time to shed one's skin, so to speak or to grow beyond childish preoccupations. Of course not all modern science is this way. The issue resolves back to the attitudes of individual scientists.

Schrödinger didn't possess these neurotic tendencies to one-up God. But Einstein did. "God does not play dice with the universe", he said. How did Albert know this? Was he locked on to some divine revelation unbeknownst to lesser mortals? Perhaps he had a direct telephone hotline with God, and he could call at his convenience to discuss the relative merit of particular scientific theories with the Divine Chief?

It is easy to become cynical addressing this issue. It is frustrating to see this type of over-inflated egotistical pomposity pass for knowledge. Einstein is considered a great genius, and lesser intellectuals marvel at his ability to second guess God. It is a sad indication when this is accepted intellectual behavior. Not that it should be repressed or forbidden. One would hope though that seekers of knowledge would do so in a spirit of humbleness and appreciation. But it is not so. Knowledge is a disposable commodity in an intellectual fast-food marketplace.

What is behind this pretentious attitude of scientists? Why do people act this way with regard to knowledge in general, and modern science in particular? Where such attitudes were 400 years ago the quite legitimate response of an inevitable cultural transition, today such attitudes are little more than a front put up to mask what is really on the inside. Like the coward vainly trying to muster up courage, the scientist who wants to believe he knows something, but is not quite sure, has to hide his uncertainty. Instead of admitting his uncertainty, which it should be obvious by now is an inherent part of the scientific endeavor (Like Crowley says elsewhere in *the Book Of Lies*: "Proof is only possible in mathematics, and mathematics is a matter of arbitrary convention." Again, interestingly, this was said some years before the publication of the Heisenberg Uncertainty Principle (1925) or Gödel's "On Formally Undecidable Propositions..." (1932), in which scientists formally came to recognize this truth), he instead turns to ideas he does not respect or believe in in the first place, such as religious and metaphysical ideas, and belittles them in his own eyes, and in the public eye, in an attempt to console himself (I suppose it is not fair to say that modern scientists only belittle religious ideas. They like as much to make fun of historical notions as well, as for example the nineteenth century notion of the "ether", which still exists today, only now it is called the "quantum vacuum"). The modern scientist comes off as an intellectual bully. But like any bully, he is only a coward. What is ironic is that he claims he is an intellectual, and the public clamors to him and sees him as a great intellectual, but in reality his mind is so little and so closed that he cannot for one second appreciate the subtle beauty and infinitude implied in the word God. It is indeed the circus of the absurd.

Still, let us probe deeper and ask why again. Why does the scientist present such an attitude? For one, it is acceptable behavior in the community of his peers, a behavior that is little more than a vestige of a once valid, but no longer valid viewpoint.

But in terms of contemporary society, the real reason such attitudes linger is because there is no really vital love in the collective heart of our society, and thus no love in the sciences our society creates. The scientist grows up with no love in his individual heart, thus, no

appreciation or empathy for the "nature" he pretends to study. What could be the awe-struck imagination of the seeker of truth is, in our society, the bland and passive disinterested curiosity of the mediocretin. This facet of the scientific attitude has its roots in a historical Christianity in which God was outside his creation, and this attitude was transformed into an approach toward truth in which truth was an objective reality independent of the seeker. Science today has little to do with "truth", feeling it has outgrown its connection to "Natural Philosophy", though this does not stop scientists from passing judgement in such arenas of thought.

So if this story is even the slightest approximation of the truth, it is obvious that not only is reason and intellect innocent from pride and pretension, but that the pride and pretension reflect a culture with no respect or love, only fear. For pride and pretension are two of the many faces of fear, and the intellect, being of the subtle and infinitely plastic quality of the mind, will have no choice but to be bent into a distorted reflection of this fear.

Chapter 17. Comments On A Great Idea

"Human capabilities will be seen for what they are, and a great new period of development will occur, in which all concepts of selfhood and reality will be literally seen as `primitive superstition.'"

- Seth: *The Unknown Reality* Vol. 2 (p 646)

As far as I'm concerned, no more profound words were ever uttered by this multidimensional being. Often Seth makes statements of rather immense profundity like the one above; if, that is, one can figure out where he was coming from. In this particular instance, I must say, I feel I have a relatively clear idea of what Seth means in this quote. As a matter of fact, Seth is the only author that I have ever come across to directly make this point. Unfortunately, Seth often only hints at the depths and implications of his more profound remarks, and this particular instance is no exception. The quote above was presented in a context in which Seth was discussing possible future potentialities of our species and so his statement is presented in such a manner as to describe the coming of some future state of mankind. Here, I am not particularly interested in possible futures of the human species. Here I am interested in exploring the implications and ramifications of a point of view in which "all concepts of selfhood and reality are seen as primitive superstitions."

Let me say it again: we want to explore a point of view, or more precisely, the implications inherent in such a view in which all concepts of selfhood and reality are seen as primitive superstitions. In other words, there comes a point in intellectual development where all the stories about what I am or what you are, and all the stories about reality, life, truth, or whatever you want to call it--all these stories take on the same meaning as the stories of Santa Claus or the Easter Bunny. Initially, we believe there is a Santa Claus or an Easter Bunny, but eventually we outgrow such notions. We no longer take them seriously but see them for what they are: fun and entertaining stories that provide a framework for the development of important qualities such as imagination or cultural affinity with our neighbors, as well as other important factors. I don't want to say that these stories take on the quality of being a myth, because the whole concept of "myth" is grounded in the assumption that there is some "real" reality with which to contrast to the myth. Such a line of thought would be self-contradictory in that it would only lead us into concocting new stories. That's not Seth's intention, and that's not what I'm talking about either. What we're saying is that all the stories; the stories of all the world's civilizations, religions, all of the philosophies, all of the sciences, all the stories of occultists, all the stories of economics and politics, psychology, sociology and anthropology, medicine and

education, law and history, all the stories of identities; of the housewife and policeman, the child and the adult, the preacher and the teacher, ALL of these stories, and every other "concept of selfhood and reality" that you can conceive of, these are all just that: stories. All of these stories are the personae through which we live out our existence, the thought-forms in which we dress our souls.

In a very real sense, to accept the above statements is not just to adopt another viewpoint or tell another story. It is to come to a level of realization where all viewpoints are seen exactly for what they are: viewpoints, stories, combinations of words and thoughts and emotions, ideas and attitudes linked together forming particular configurations within human minds and human lives, configurations that exert unbelievable power over each and every one of us on all the levels of our individual and collective experience.

The crucial factor involved in understanding what I'm getting at here is the element of belief. Belief becomes the crucial point of focus because it reveals our relationship to any given story, and in fact, one's relationship to one's self. It's the difference between believing that a story is a story or believing that a story is something other than a story. What do I mean by this? Let's explore the meaning of these statements in terms that are a clearer reflection of our actual experience with what I am calling "stories".

Our individual and collective perceptions, and thus, experience, are always on some level or another couched within a mental framework or context. Such a context serves the dual function of, on one hand, defining the scope and breath of our experience, and, on the other hand, defining the limits and boundaries of our experience. The mental boundaries of our lives both enclose us within their scope, but also relate us to the nonverbal and nonconceptual levels of our experience. To paraphrase Seth:

"It is only through ideas that we can achieve true freedom, but it is only through ideas that we can eliminate our true freedom".

And it is this particular line of consideration that leads us into the essential crux of both of Seth's quotes; that is that we must at some point or another, as individuals and as a species as a whole, come into a more realistic relationship with the ideas and mental-imaginative constructs that define our lives, these being precisely the nature of all the "stories" of our lives. However, I do not think that such a level of insight necessarily entails that we come to see "all concepts of selfhood and reality ... as `primitive superstition.'" This realization in itself provides a useful first approximation or, in another sense, is like training wheels into a vaster and more inclusive realization and appreciation of the roles that mental-imaginative constructs --thoughts, words, ideas, definitions and the like--do and can play in our lives and in the human experience as a whole. These things are not necessarily "primitive superstitions" though further on we will address why Seth has chosen this particular term. These things are products of our mind on both a collective and individual basis, and as such are in many respects akin to the honey produced by bees or the milk produced by cows. In such a sense I believe that this is our fundamental relationship to the products of our mind; they seep from us, we perspire them, they flow from us automatically and quite spontaneously as a natural by-product of our inherent organization as human beings. Our minds, through imagination and contact with other minds,

generate products; thoughts, ideas, etc., and these disperse from us much as a plant produces and disperses seeds. In a sense, this is the old occult adage "thoughts are things", and seeing them as such makes it much easier for us to ask fundamental questions such as: What is the relationship between mind by-products (thoughts) and individuals or collective groups of people? At what levels are these relationships fixed and at what levels are these relationships flexible?

With regard to our "fixed" relationships to mind products, it is not my intent here to go into the mechanisms of thought generation and the behavior of thoughts as individual entities for I have discussed this in other chapters. Suffice it to say at this point that the fixed aspects of our relationships to thoughts involves the fact that, aside from the fact that we cannot avoid thinking, thoughts themselves serve as a type of "glue" or bonding principle both in terms of an individual psyche and collective social organizations. Thoughts, and the gestalt-like organization of them, hold together both our individual minds and our collective social groupings. This is an inherent, unavoidable consequence of our relationship to our thoughts, and as such is therefore "fixed". We can no more prevent these types of processes than we can avoid metabolizing food we have eaten.

Within the scope of this essay, however, the truly relevant question is: What are the flexible levels of our relationship as human beings to the products of our minds? It is through this line of inquiry that we can make clear sense out of Seth's quote and in particular his reference to "primitive superstitions". What is flexible in our relationship with thoughts? Well, it is inevitable that we think. However, the content of what we think is obviously quite flexible. That the actual shape and content of thoughts is flexible is a vast understatement. In actuality there is no more plastic and moldable medium in our experience. I do not think it would be an exaggeration to say that thoughts are infinitely plastic. I do not think there is any limit whatsoever to the shape, content and meaning that thoughts can take. We can have little thoughts, big thoughts, good thoughts and bad, intellectual thoughts and stupid ideas, thoughts about thoughts, and thoughts about anything whatsoever, even thoughts about nothing at all! All we know and understand expresses itself as thought, and it is through the process of thought that the entire drama of human experience is played out. The processes of mind through which thoughts are created and sustained are not amenable to an all-inclusive containment by thoughts themselves, but this has not prevented us from creating an unending myriad of thoughts about the nature of thinking, which again only illustrates the infinite plasticity of forms which thought can take.

The plasticity of thoughts is both vast and transcendental and indeed it is almost trivial to point this fact out. Yet this realization is rarely acknowledged though all our mental behavior rests securely in this fact, and we quite subconsciously and instinctively continue to produce an unending array of ever-changing, ever different thoughts. Yet to see this fundamental plasticity of thought is, it seems, disconcerting to the modern mind. For what is implied in this realization is that all the thoughts of humankind, all the thoughts of all the peoples of all the cultures and societies past, present and future are, in some sense or another, all on equal footing. Thus, in our Western Civilization's insecure and tenuous mental grasp of things it is easier to ignore some issues altogether. It is easier to talk about primitive mythologies, medieval superstitions and old wives' tales and concoct infinite distinctions of types and categories of thinking that in the end

only serve to blind us from the fundamental unity of the fact that all humans make thoughts and that those thoughts can take an infinite variety of forms.

The previous paragraph leads us to the fundamental point of this essay and also the bottom line to the Seth quote that started this section. And that is to *focus our attention on our attitudes towards our thoughts*. This is the second great flexible aspect in our relationship to the products of our minds. Not only can thoughts take an infinite variety of forms, but as well, and in some respects more importantly, people can take an infinite variety of attitudes to the thoughts that affect them and fill (or we could say 'define') their lives. Seth's

statement presents a particular attitude towards our relationships to our thoughts on both collective and individual levels. The true crux of his statement was alluded to earlier when the issue of "belief" came up. This is THE key word: *BELIEF*. This single word defines or implies a vast set of attitudes and assumptions with regard to individual and collective relationships to ideas. And these attitudes and assumptions are themselves mostly unconscious or instinctive reactions to the fact that we make and have no choice but to be in a relationship with thoughts. And when these attitudes are not unconscious, they are at best nebulously defined, half understood glimmerings of something not quite grasped or comprehended for what it is. What I'm saying here is that *our attitudes about our relationship to thoughts and ideas is probably the most crucial factor on all of the levels of human existence* and this fact is simply not recognized as such, at least not in any practical or useful fashion. If it was, we would not *believe* in ideas, there would be no process of belief, except perhaps in the early developmental stages of an individual's psyche.

Thus, this is what Seth means by saying: "Human capabilities will be seen for what they are, and ... all concepts of selfhood and reality will be literally seen as 'primitive superstition.'" Seth is saying that we will come to see the mind and the ideas generated and sustained by the mind in a new way. And the essence of this "new way" will be that we won't believe in ideas, for we will see *the need to believe in ideas* to be a "primitive superstition". It is not that any particular concepts will be thought of as superstitions, whether they be concepts of selfhood and reality, or concepts about Santa Claus and the Easter Bunny. Concepts will be recognized exactly for what they are--concepts. There will be no more mistaking of ideas for the things that ideas are intended to describe. "Reality" will no longer be simply a word or concept but a signpost, a beacon of meaning in the mental world pointing to the ultimately undefinable experiences of living consciousnesses. Mental realities will be seen to be one element among a multitude of elements in the overall experience of humans and other creatures. There will no longer exist a need to attempt to capture experience in mental terms, operating under some nebulous notion that ideation supersedes experience. Ideation will be seen as only one among a myriad of levels of human experience. The proper place of ideas will be fit into the human framework and humankind will no longer be slaves to ideas, but ideas shall become active partners in the endeavors of humankind. And the crux of this transition shall be the elimination of the need to believe in ideas, not any particular ideas, but ideas as a whole.

Yet to not believe in ideas does not necessarily imply that one sees the relationship between ideas and reality clearly. One may be a stubborn nihilist, for example. But to see clearly the relationship between ideas and reality does completely imply that one no longer needs to believe in ideas. It will be realized that ideas do not require belief to be functional, and

that ideas actually work better if not suffocated under a blanket of belief. Again, and this simply cannot be over stressed at humanities' present level of evolution: *the need to believe in ideas will be seen as the superstition itself.*

And this realization *will* lead humanity into new ways of life because it will not simply be another story about mind and ideas but a clear, intuitive realization--a thoughtless thought or wordless insight--about the nature and place of mind and ideas in the human experience. But this "thoughtless thought", this new way, or new, deeper and more inclusive understanding will not come upon us magically or miraculously. It will come when we as individuals seek to understand with greater clarity and depth, and much more importantly, with a deeper and truly sincere intellectual honesty, our relationships to the ideas that bind or free us.

Chapter 18. Words and Experience

Here I want to talk about words and ideas and how these relate to our human condition. The theme here is this: experience, the totality of our experience as human beings, simply cannot be contained in words, thoughts or ideas. The important implication of this realization is that words and ideas are simply one level among a myriad of levels in our overall experience.

It seems almost obvious when it is said straight out, yet so many act in ways seemingly contrary to this fact. Our experience itself is the primary reality: our loves and hates, motivations and desires, our attitudes, our friends and enemies, our possessions, our thoughts, feelings, and all the zillion other things we contend with day in and day out. These things then become the bottom line in life: they are what's going on here. It's not lofty philosophical platitudes that spell out the important issues, it's our perception of ourselves, of our immediate environment and the ability to react accordingly that defines the "stuff" of our experience. Ideas, explanations, descriptions -- these are secondary, after the fact, so to speak. The experience is first; the thought, idea, conceptualization comes second, as a response, an echo, a reflection of our immediate experience.

There's a real problem in our society, in our hallowed academic intellectual centers, and this is the problem of believing in the things that we think, or the problem of believing in thoughts, or the problem of trying to turn life solely into a set of abstractions; of believing that life can be contained completely or wholly, whatever that may mean, in some type of philosophy or theory, some neat and tidy intellectual package. In terms of my own personal observations, it seems that people try too hard to attempt to mold their experience to their preconceptions instead of allowing their experience to guide their thought process.

The mind's very nature is that of plasticity, flexibility, or more precisely, resonance--the ability to phase-lock to "vibrations". Thus the mind is actually designed to mold to the ever-changing panorama of our experience. Yet we (myself included !) persist in the futile endeavor to fit our total experience into a package of ideas, attitudes and feelings.

The implications of the attitude I am trying to convey here are astounding. One quits believing in word constructions per se. One begins to see a different essence behind ideas, behind the surface content of thought constructions. New colors, new qualities can be seen: emotional textures, reliefs, intensities; forms and patterns of mind, feeling and attitude.

One also becomes blatantly aware of the process of belief itself. This process can be seen to be an intertwining of thought and feeling, the forming of mental constructions through which emotions can flow and eddy, sometimes turbulent, sometimes calm, giving off a particular "scent" or attitude, conveying a very unique mood or context, giving rise to an event, a situation, a moment of experience.

It becomes apparent that word/thought constructions possess validity and meaning only in relation to the primary fact of our experience, and thus are seen in this light, as constructions generated by us which serve to express on the levels of mind and emotion the source from

which they sprang--which is the way it is anyway whether we admit it or not. The actual 'story' conveyed by the thought construction becomes secondary, and the overall experiential context, the mood, the attitude, intentions and motivations, the texture that uniquely is the situation surrounding the thought construction becomes the focus of scrutiny and investigation.

We quit explaining our experience in terms of words as if it will be something more than just that. We come to expect nothing from word constructions in the sense of gaining security from this or that particular belief. Security becomes a function of one's real and existential relationships in life. And word constructions become decorations, pleasantries meant to enhance and enrich our experience on particular levels.

It becomes apparent that the meaning of life is you and I and all this stuff around each of us. Any explanation of life is just that: an explanation, a set of words or phrases strung together in such a way that, for some conscious or unconscious reason, it tickles our fancy or makes us feel good. Its justification truly lies not in its fundamental truth or falsehood, whatever that may mean, but basically in our subjective orientation. Aesthetics- subjective response-is always, ultimately the bottom line in our experience.

The "reality" I'm trying to describe here is much vaster than any name or label can convey. It is creation bubbling up, frothing over into physical manifestation. It is the creative miracle of us, of you, of me, of our lives, of all of it.

Yet, explanations exist, they are a facet of us, of our existence and experience, and our reaction to this level of our being is just as much an aesthetic event as any other thing in life. But they (explanations, idea constructions) should be understood on their own level as extensions of our experience, extensions into those particular and unique directions that rightly belong only to words and ideas, concepts and conceptualizations.

Independent of anyone's opinion, the actual role that words and ideas will play within our experience is for us to choose, whether consciously or unconsciously, and whether we accept the fact or not. If our goal is a fuller expression of our being (and what else can there really be when you think about it?), then it is apparent that, basically, the ideas should not dictate us. We should dictate the role ideas shall play. Of course, again, this really is the way it is whether we admit it or not. It is my presumption that keeping this fact in mind could really make our experience so much more pleasurable for all of us.

Explanations could serve to enhance the depth and quality of our experience, and in certain respects do (such as the material gains from science), but in other respects serve to belittle us and separate us, create fear, hate and all the other petty realities of half knowing.

No set of ideas, words, philosophies, dogmas or theories is going to be able to do any more than to merely reflect certain facets of our experience, or to highlight particular features (inevitably at the expense of others). The bottom line here is that our lives are so simply and complexly multifaceted that it is a joke to think that any set of words could ever capture the nature and meaning contained in and generated by our experience.

The irony here is that we really don't need to capture life in words because *we are life!* But there's always someone who'll try (just look at me !), and for those of us who try, it's worth remembering that really, we do it for each other, for our amusement, entertainment, something to pass the time away.

The process of belief binds us to ideas, and often subordinates our lives so that the ideas, conceptions, identifications all become a parasite on our life, energy and vitality. The idea-creatures use us to perpetuate their being instead of us using them to enhance the quality of our own being. The results of our present relationship to the realms of mind and emotion are often not good for you or me. The present situation may help serve the perpetuation of idea creatures such as "freedom" or "democracy" or "enlightenment" or whatever the particular ideas that one is mentally and emotionally trapped within, but the bottom line is that the idea cheats you out of your own self-fulfillment to the degree that you allow the idea to override the natural and healthy expression of your being. Obviously there are many exceptions, but in my experience this tends to be the rule.

Belief is necessarily an individual event. That is, individual personalities believe. And the beliefs harbored by an individual to a large part determine the quality, character and texture of the individual's experience on all levels: physical, emotional, mental and spiritual.

Notwithstanding such complex considerations, the ramifications of belief also play a fundamental role at the social level. The "social level" itself is the sum of beliefs of individuals. This leads us to such issues as social hypnosis and mass delusions/beliefs, which in actuality are the process by which thought-forms blind us. I guess the moral of the story is that you simply just can't eliminate belief, but one can most definitely sharpen and clarify how this process fits into the greater framework of experience, of what role this process will play in one's life.

Ultimately though, the main theme here is to see **CREATION!** To present and point out the nature of our relationship with words in terms of the ultimately mysterious and creational (note: NOT creative as is commonly understood!) nature of this process within the framework of our individual and collective experience. To have the reader see how she/he creates meaning on the spot. How, as you read this, you are right now creating the meaning of these words. To show how the meaning flows from you like tears flow from your eyes, like sweat rolls from your skin; words roll from your lips, meaning pours out of you into your life. This process of meaning creation is constant and plays THE basic role in our experience (not forgetting the paradox of defining experience in terms of words). "Reality" is constantly being created by us as we give meaning to our existence, as we make meaning within our existence. And this process is always here, always NOW. This process is what we mean by "existence". And this process is basically a paradox because any attempt to explain or conceptualize this process is simply another example of the process in operation. Realize that this meaning generating ability of ours is basically a mystery. The same way that we breathe and walk and talk, we make meaning, all quite unconsciously, quite automatically, naturally and spontaneously. I'm sure not going to pretend that I know how it's happening, and I can't believe the audacity of those deluded enough to claim they do. But dammit! Here it is again! As I sit here and write it's happening: meaning bubbling forth. As you sit and read this it's happening. Feel the meaning swelling out of you as you read these words, as you give meaning to this particular statement. Feel the meaning. What is it? Only you know, it is yours.

Once you see it (this process of meaning creation) you can't help but see it everywhere and on all levels: The sun constantly creating its light and heat, emanating outward from the inner depths of its being, much as the words, meaning, emotions, ideas flow outward from us exposing the inner nature of our being. The Earth weaving out her seasons bringing forth her

fruits of life creating ever anew the inner essence of her being. Time welling up from out of apparent nothingness, each moment created new inside the womb of the previous moment, to swell into its own as the previous moment disappears, only so that it may fade imperceptibly into NOW, this very moment right here, right now. Each thing in your experience shining out its being as the meaning of its existence.

Chapter 19. The Ultimate Meaning of Things: Discourse on the Uses of Music

Oh the joyous wonders of music! When the quantum physicists recognize Bach and Beethoven in their equations then truly will we have sciences of a sparkling vitality. Just why is it that the rhythmic patterns that make the most sense to the human ear always resolve themselves to a beat of four counts? I think it is because we are primarily made out of carbon atoms. And every first year student in chemistry learns that carbon has a valence of four. The connection is almost too obvious! The music we make is a reflection of the lives of the atoms that make up our physical being! And when we stop for a second and consider the overwhelming diversity of music, then the diversity of carbon-based life does not seem so much of a surprise.

There is much to gain, from science's point of view, by reconciling itself with the occult. Both study vibrations. Yet to the scientist the study of vibrations usually amounts to the manipulation of very dry and abstract equations and the readings of jiggly patterns on cathode ray tubes. Thus, the miracles of music are all but lost from science. But in the occult, the miracles of music--the infinity of shapes and textures, interwoven harmonies, points and counterpoints, the dynamic rhythmic motions from the grand and sweeping to the minute and subtle, and even the endless droning of monotony--are seen as only one set of examples of the infinite flexibility of the mind. Music as a whole represents only the smallest cross-section of the set of thoughts and emotions swimming and jiggling, wagging and dancing on the inner planes. Yet a cross-section it is indeed. As I sit here and write, it dawns on me that both science and the occult could gain much by seeing the world of music as a microcosm of their respective fields of intellectual endeavor. To the scientist music represents the endless combinations of physical matter. To the occultist music is a constant reminder of the endless and myriad forms and dimensions that fill the inner life of the human being. There was indeed a time and a civilization in which the study of music stood alongside the study of scientific, philosophical and religious matters.

And whether we are a scientist or occultist or neither, or both, it does us all much good to glance at the endless diversity of the human experience reflected symbolically in the endless diversity of music. From this perspective, it actually matters little what we would like to believe ourselves to be. Imagine feeling all the feelings of all the people who have lived and who live now and who shall ever live. Imagine all of the things thought about, all of the experiences experienced. Imagine living each person's life, seeing the world through their eyes, thinking through their thoughts, wearing their body, suffering their sorrows and celebrating their joys. Imagine doing this for every conceivable person in every conceivable age. Imagine you are the King and you are the Peasant, you are Man and you are Woman, you are the Babe, the Teen, the Adult, the Senile, you are the Sage and the Idiot, the Teacher and Student, you are the Genius and the Insane, you are the Middle American Consumer and the Starving Ethiopian, you are you, and you are me, and we are all people.

Let's take this game of imagine even further for it is our game and we can do with it as we please. Let us imagine as well, all the things not human and how existence appears to these things. How does the Sun see the Earth? We are so used to seeing the Sun only in the day, but

the Sun always is looking at us. Or imagine the brief life of a wave on the ocean or of a rain drop falling from the sky. Imagine what all the animals might think and see and feel. Oh what stories they could tell us if we would only ask! How about the sidewalk outside your house or the trees you pass by each day. Do you think that they do not notice you? Or perhaps they ignore you as we ignore them, maybe they are too concerned with their own personal affairs to take notice. See and feel this endless panorama of sensation and awareness in your mind's eye. The question I would pose to you is : What does it all mean? This, as you shall see, is a trick question and if all goes well, by the end of this dialogue, you will know what *I* mean!

For countless ages now the mystical tradition has been the heritage of Humankind. In all civilizations, in all periods, in every age have been those claiming to have experienced the absolute oneness of the universe, of reality. Whatever this thing is, it defies a name, for whatever you may call it is simply only another one of its infinite manifestations.

And each age has its own unique reaction to such claims. At times it is a revered event marking the climax of an individual's experience in that culture. At other times such a claim is the mark of the heretic to be burned at the stake. Still in other periods such a claim is the mark of a neurosis, a repressed tendency from childhood, a thing to be worked out in the Discussion Group. And even somewhen, far removed from our collective memories, there is a time where such an event is so commonplace that it elicits no more excitement than taking your morning shower.

The experience itself is as varied as are the reactions to the event. Obviously one's report of the experience will be colored by one's culture and symbology, couched in the terms that the individual understands and uses as a means of expression. Whatever the individual mode of expression, ultimately what will be told is a story, a story of the experience of the oneness of whatever it is that is one.

However, it does not take mystical insight to conceive of a story. Granted, the mystical insight provides impetus to tell a story about the ultimate nature of reality. But there are countless other stories as well. All of the ideas available to our species can be permuted again and again to construct myriad uncountable stories: stories about what you and I are, stories about the meaning and purpose of life, the nature of reality and existence, stories about every conceivable topic. Then there is the realm of stories about the mind, stories about consciousness, stories about understanding, thinking. Here is a paradoxical realm and the paradox is: No matter what stories we concoct about the mind, *we are still always within the confines of our minds*. Can the mind make up a story that takes it outside of itself? This is a level of insight where there is not quite anything to "grab onto"; for no story or set of stories can quite capture "what is going on here" within the actuality of our experience. This effect is illustrated most clearly when we tell stories about the mind or the nature of consciousness, because at these levels of conceptualization, the normally operating mechanisms of self-hypnosis are potentially the thinnest and easiest to see through if we only follow our thoughts about such matters to their rightful end. And this end is us, whatever that may mean.

For no matter what the story, the ultimate reality behind any story is **US**, we are creating the story and giving the story meaning within our experience. The emotions that fill our stories, our hopes and desires and motivations, our fears and prejudices, our ignorance or our understanding; the hidden essence behind all of our stories is a reflection of *our* inner essence,

an expression of us; the story teller's being--you and me. When we tell stories all we are really doing is illustrating the inherent, inescapable and ultimately undefinable CREATIONAL nature of our conscious awareness and being. It is us creating the meaning, filling the story with the meaning that is inherently us.

All of this amounts to the great vast paradox of our being because, even though our nature escapes definition, in reality it does not *need* to be defined because we *live* it! Our being is ultimately mysterious, undefinable, if not completely magical. Our experience cannot fit into words. Words exist to embroider, to decorate experience. This we have forgotten, this we need to remember and many of our so-called problems will simply disappear. They will disappear because, as van der Leeuw said, we will realize that we have been asking the wrong questions all along.

The fact is you, the reader, giving meaning to this or any other idea. An idea does not give reality to your experience. You give meaning to ideas and bring the realm of ideas into the scope of your experience. The bottom line is that ideas will control you to the degree that you blindly accept them. The alternative is for you to control ideas and use them as *you* see fit.

All there really is, is us, you and I, and our experience, and how we decide to conceptualize this is essentially arbitrary and a function of *us* - whether we know it or not. But this is something we have forgotten, or perhaps never even realized. We are so entranced, enchanted and hypnotized by our own mental creations that we have forgotten the fact that it is we who have created and given meaning to these ideas in the first place. Breaking through this hypnosis is the essential "mystical experience", and such a breakthrough will inevitably lead you into the infinite and undefinable mystery of your own inexplicable and yet, completely obvious, being.

Chapter 20. Conclusion: What's Going On Here?

Like Alan Watts has said, the most profound questions are the simplest and most obvious. The question I'm particularly interested is: What's going on here?

This whole book has consisted of one world-view after another, one paradigm after another. Or, just laying it out as simply as possible, this book has been one *story* after another. At the onset I said that these were all to be laid side by side so that we may compare and contrast the various elements of these world-views, these stories, to understand them on their own terms and to see especially in which aspects they agree. But with all of these different viewpoints in hand, one can not help but ask that most profound question of them all; Just what the hell is going on here?

We can approach this question from many perspectives. I think one important realization that comes from the survey of all of these philosophical, scientific, occult and mystical viewpoints is that there is just way more going on here in reality than any of us ever suspected. Reality, Life, Existence, Nature, or what ever you want to call it, is just so incredibly rich with possibilities that, like the popular cliché says; the truth is much stranger than fiction. Taking all of these views at face value, the claims of Seth or Leadbeater, the incredible perspectives of modern science with its quarks, DNA and black holes, the human imagination seems to pale in comparison. Though ironically, it is through the human imagination that these things have come to be known by us.

But there is another perspective we can take of this issue of "What is going on here?". Instead of taking each story at face value we can instead see that indeed what we have in hand is a bunch of stories. Some stories may appeal to us more than others for whatever unique and particular reason, but undeniably we are dealing with stories. Throughout this book I have referred again and again to the concepts of world-views, paradigms and belief systems. We have from the start taken the stance that we must go inside these world-views and understand them in their own terms, to understand the elements of meaning within each. I have claimed that the only fair way, the most *objective* way in which to approach these world-views is by going right inside of each of them; by staring at the world through them from the inside out, so to speak. The only way we can be as fair and as objective as possible with each world-view is to understand it subjectively, as our own personal viewpoint, our own personal belief system. The most objective approach available to us is to be as honestly aware of our own subjective orientation as is possible. And the most honest approach available for us to understand each other is to be open to understanding each other's subjectivity.

But what does this exercise do for us? What do we gain from opening up to all of these viewpoints? One thing we gain is an appreciation for the incredible possibilities inherent in this thing we call Life, or at least in the possibilities of our human imagination. But depending upon

our attitude, we may also walk away from this exercise even more convinced at how insane the world is and at how people will concoct the most far-out tales and believe anything. But there is also another lesson we can take from this exercise and that is the realization that; **The world is made up of stories, not atoms**¹.

I could have made this claim at the beginning of the book, but it is relatively meaningless until one has lived through many stories, until one has believed and experienced life from multiple viewpoints. Only then is the truth of such a statement apparent. It would seem that the fundamental fabric of our being, of our immediate conscious awareness, always expresses itself through mind and imagination. No matter what we believe, we are still believing, and that is the important point. Even if we claim to believe in nothing at all then it is still us believing, only in this case we believe in nothing instead of something.

Our consciousness is the essential matrix of our being. And as we can see from the variety of viewpoints I have discussed throughout this book, it is a rich matrix indeed. And when one realizes all of the cultures with all of their particular beliefs, and all of the individuals within these cultures, up and down throughout history, and the unique slants given by us individuals to our cultural belief systems, then what I have attempted in this book pales to insignificance in comparison. The panorama of consciousness is rich and boundless beyond any of our individual hopes, beliefs and expectations. And this is only human consciousness, which in itself is a microcosm, a reflection of the endless infinite variety, the never ending variations upon never ending themes that is the Infinity of Nature itself.

Notes: Chapter 20

¹This is a quote attributed to Muriel Rukeyser in the book: LeShan, (1987), page 9.

BIBLIOGRAPHY

Aaronson, B., and Osmond, H. (Eds.). *Psychedelics*. New York: Doubleday & Co. Inc., 1970.

Allen, R.D. "The Microtubule As An Intercellular Engine". *Scientific American*. 257 (2), February, 1987, page 42.

Anderson, I. *Cognitive Psychology And Its Implications*. San Francisco: Freeman, 1980.

Arya, A.P. *Elementary Modern Physics*. Menlo Park, CA: Addison-Wesley Publishing Company.

Bak, P. "The Devil's Staircase". *Physics Today*. December, 1986.

Besant, A. *Annie Besant: An Autobiography*. London: T. Fischer Unwin, 1893.

Besant, A. *The Seven Principle Of Man*. Adyar: Theosophical Publishing Society, 1931.

Besant, A. *Karma*. Los Angeles, CA: Theosophical Publishing House, 1918.

Besant, A. *A Study In Consciousness*. Madras: Theosophical Publishing House, 8th edition, 1980.

Besant, A., and Leadbeater, C.W. *Occult Chemistry* London: Theosophical Publishing House, 2nd edition, 1919.

Besant, A. and Leadbeater, C.W. *Thought-Forms*. Wheaton, IL: Quest, 5th edition, 1986. (Originally published in 1901).

Blavatsky, H.P. *The Secret Doctrine vol i*. London, 1928.

Boas, M. *The Scientific Renaissance 1450-1630*. New York: Harper and Row, 1962.

Bravo, G. and Grob, C. "Shamans, Sacraments, And Psychiatrists". *Journal Of Psychoactive Drugs*. 21(1), Jan-Mar, 1989, 123-8.

Brookesmith, P. (Ed.). *Thinking The Unthinkable*. London: Orbis Publishing, 1984.

Capra, F. *The Tao Of Physics*. New York: Bantam, 1976.

Castaneda, C. *Journey To Ixtlan*. New York: Simon and Shuster, 1971.

Chia, M. and Chia, M. *Cultivating Female Sexual Energy*. New York: Healing Tao Books, 1986.

Cotman, C.W., Nieto-Samperdro, N., and Harris, E.W. "Synapse Replacement In The Nervous System Of Adult Vertebrates." *Physiology Review*, Vol. 61, No. 3, 1981, pages 684-784.

Crombie, A.C. *Medieval And Early Modern Science, Vol II*. Cambridge: Harvard University Press, 1967.

Crowley, A. *The Book Of Wisdom Or Folly*. West Point, CA: Karl Germer, 1961.

Crowley, A. *The Book Of Lies*. York Beach, ME: Weiser, 1978.

Davidoff, L.L. *Introduction To Psychology, 2nd edition*
New York: McGraw-Hill, Inc., 1980.

Davis, M. (Ed.). *The Undecidables: Basic Papers On Undecidable Propositions, Unsolvable Problems And Computable Functions*. New York: Ravin Press, 1965.

Dawkins, R. *The Selfish Gene*. New York: The Oxford University Press, 1976.

DeGracia D. J. *A Short Guide About Hallucinogenic Drugs For the Explorers of Inner Space*. Posted on CompuServe. 1993

DeWitt, B.S., Graham, N. (Eds.). *The Many Worlds Interpretation Of Quantum Mechanics*. Princeton, N.J.: Princeton University Press, 1973).

Dinnage, R. *Annie Besant*. Middlesex, England: Penguin Books, 1986.

Dossey, L. *Recovering The Soul*. New York: Bantam, 1989.

Eccles, J.C. *The Understanding Of The Brain*. New York: McGraw-Hill Book Co., 1973.

Feder, J. *Fractals*. New York: Plenum Press, 1988.

Flam, F. "Physicists Take a Hard Look at Vision". *Science*, Vol. 261, 20 August 1993, 982-984.

Francis, J.J. *Galactic Models For A New Astrology*. Pamphlet published by author, Library of Congress Catalog Card Number: 82-90287, 1982.

Freeman, W.J. "The Physiology Of Perception". *Scientific American*, 264 (2), February, 1991, page 78.

Frisch, D.H. and Thorndike, A.M. *Elementary Particles*. Princeton, NJ: D. Van Nostrand Co., 1964.

Gallagher, and Winifred. "The acid test - LSD in research". *American Health* 9:60-7, Dec 1990.

Gleick, J. *Chaos*. New York: Penguin, 1987.

Gribbin, J. *In Search Of Schrödinger's Cat*. New York: Bantam, 1984.

Guillen, M. *Bridges To Infinity*. Los Angeles: Jeremy P. Tarcher Inc., 1983.

Hall, M.P. *Man, The Grand Symbol Of The Mysteries*. Los Angeles: Philosophical Research Society, 1972.

Hanna, M.W. *Quantum Mechanics In Chemistry*. Menlo Park, CA: The Benjamin/Cummings Publishing Co., Inc. 1981.

Hansen, G., Jensen, S.B., Chandresh, L., and Hilden, T. "The Psychotropic Effects Of Ketamine". *Journal Of Psychoactive Drugs*. Vol. 20(4), Oct-Dec, 1988, 419-425.

Hawking, S.W. *A Brief History Of Time*. New York: Bantam, 1988.

Hillman, H. *Certainty and Uncertainty In Biochemical Techniques*. Ann Arbor, MI: Ann Arbor Science Publishers Inc., 1972.

Hofstadter, D. *Gödel, Escher, Bach; The Eternal Golden Braid*. New York: Vintage Books, 1979.

Infeld, E. and Rowlands, G. *Nonlinear Waves, Solitons And Chaos*. Cambridge: Cambridge University Press, 1990.

Jaffe, B. *Crucibles: The Story Of Chemistry*. New York: Fawcet, 1960.

Jantsch, E. and Waddington, C.H., (Eds.). *Evolution and Consciousness*. New York, Addison and Wesley, 1976.

Karagulla, S. and van Gelder Kunz, D. *The Chakras and the Human Energy Fields*. Wheaton, IL: Quest, 1989.

Kline, M. *Mathematics The Loss Of Certainty* Oxford: Oxford University Press, 1980.

Kuhn, T.S. *The Structure Of Scientific Revolutions*. Chicago: The University Of Chicago Press, 2nd edition, 1971.

LaDage, A.J. *Occult Psychology*. Saint Paul: Llewellyn Publications, 1978.

Landscheidt, T. *Sun-Earth-Man, A Mesh Of Cosmic Oscillations*. London: Urania Trust, 1989.

Leadbeater, C.W. *The Science Of The Sacraments: An Occult And Clairvoyant Study Of The Christian Eucharist*. St. Alban Press, 1920.

Leadbeater, C.W. *Man Visible And Invisible*. Wheaton, IL: Quest, 3rd Quest printing, abridged, 1980.

Leadbeater, C.W. *The Astral Plane*. Madras: Vasanta Press, twelfth reprint, 1984.

Leadbeater, C.W. *The Chakras*. Wheaton, IL: Theosophical Publishing House, 4th Quest edition, 1985.

Leadbeater, C.W. *Clairvoyance*. Wheaton: TPH, 1986, 15th reprint.

Leadbeater, C.W. *The Inner Life*. Wheaton, IL: Theosophical Publishing House, 4th Quest edition, 1987.

Leary, T. "The Religious Experience: Its Production And Interpretation". *Psychedelic Review*. 1, 1964, 324-46.

LeShan, L. *The Medium, The Mystic And The Physicist*. New York: Ballantine Books, 1974.

LeShan, L. *The Science Of The Paranormal*. Wellingborough: The Aquarian Press, 1987.

Lutyens, M. *Krishnamurti: The Years Of Awakening*. London: John Murray, 1975.

Mandelbrot, B.B. *Fractals: Form, Chance, and Dimension*. San Francisco: Freeman & Co. 1977.

Mandelbrot, B.B. *The Fractal Geometry Of Nature*. New York: Freeman & Co., 1982.

Mavromatis, A. *Hypnagogia*. London: Routledge & Kegan Paul, 1987.

- McConnell, R.A. *Parapsychology In Retrospect*. Published by author, 1987.
- Meade, M. *Madame Blavatsky: The Woman Behind The Myth*. New York: Putnams, 1980.
- Monroe, R. *Journeys Out Of The Body*. New York: Doubleday, 1971.
- Monroe, R. *Far Journeys*. New York: Doubleday, 1985.
- Mortimer, C.E. *Chemistry*. Belmont, CA: Wadsworth Publishing Co., 5th edition, 1983.
- Motoyama, H. *Theories Of The Chakras: Bridge To Higher Consciousness*. Wheaton, IL: Quest, second printing, 1984.
- Neff, M.K. *Personal Memoirs Of H. P. Blavatsky*. Wheaton, IL: Quest, 2nd printing, 1971.
- Ophiel. *The Art And Practice Of Clairvoyance*. York Beach, Maine: Samuel Wiser, Inc., 1982.
- Peitgen, H.O. and Saupe D. (Eds.). *The Science Of Fractal Images*. New York: Springer-Verlag Inc., 1988.
- Phillips, S.M. "Composite Quarks And Hadron-Lepton Unification". *Physics Letters*. **84B**, 1979, 133.
- Phillips, S.M. *Extra-Sensory Perception Of Quarks*. Wheaton, IL: Theosophical Publishing House, 1980.
- Phillips, S.M. "A Physico-mathematical Interpretation Of Paranormal Descriptions Of Fundamental Particle Structure". *Psychoenergetics*. United Kingdom: Gordon and Breach Science Publishers, Inc.. Vol.5, 1983, pp. 35-52.
- Prigogine, I. "Symmetry Breaking Chemical Instabilities". *Irreversible Thermodynamics And The Origin Of Life*. Proceedings of the Third International Biophysics Congress, MIT. Edited by Foster, Silver and Tobias. New York: Gordon and Breach Science Publishers, 1974.
- Prigogine, I. *From Being To Becoming*. New York: Freeman, 1980.
- Prigogine, I. and Stengers, I. *Order Out Of Chaos*. New York: Bantam, 1984.
- Roberts, J. *The Nature Of The Psyche*. New York: Prentice Hall, 1979.

Roberts, J. *Dreams, "Evolution", And Value Fulfillment, A Seth Book*. New York: Prentice Hall, 1986.

Roberts, J. *Seth - Dreams And Projections Of Consciousness*. New York: Bantam, 1989.

Rogo, D.S. *Leaving The Body*. New York: Prentice Hall, 1986.

Rogo, D.S. *Psychic Breakthroughs Today*. Wellingborough: The Aquarian Press, 1987.

Roll, W.G., and De A Montagno, E. "Systems theory, Neurophysiology and Psi". *Journal Of Indian Parapsychology*. 4(2), 1985, 43-84.

Rucker, R. *Infinity And The Mind*. New York: Bantam, 1982.

Rudhyar, D. *The Astrology Of Personality*. New York: Doubleday, 2nd edition, 1970.

Rudhyar, D. *The Sun Is Also A Star*. New York: E.P. Dutton & Co., 1975a.

Rudhyar, D. *Occult Preparations For A New Age*. Wheaton: Quest, 1975b.

Rudhyar, D. *The Fullness Of Human Experience*. Wheaton, IL: Quest, 1986.

Seligmann, K. *Magic, Supernaturalism And Religion*. New York: Pantheon, 1976.

Shere, J. *Dane Rudhyar 1985- , A Brief Factual Biography With Listing Of Works*. Pamphlet copyrighted by author, 1972.

Shimony, A. "The Reality Of The Quantum World". *Scientific American*. 258 (1), January, 1988, page 46.

Smith, L.E. *Occult Chemistry Re-evaluated*. Wheaton, IL: Theosophical Publishing House, 1982.

Starhawk. *Dreaming The Dark: Magic, Sex and Politics*. Boston: Beacon Press, 1982.

Stevens, J. *Storming Heaven: LSD And The American Dream*. New York: Harper & Row, 1988.

Taimini, I.K. *The Science Of Yoga*. Wheaton, IL: Quest, 1967.

Tillet, G. *The Elder Brother A Biography Of Charles Webster Leadbeater*. London: Routledge & Kegan Paul, 1982.

Trungpa, C. *Visual Dharma The Buddhist Art Of Tibet*. Berkeley, CA: Shambhala Publications Inc., 1975

van der Leeuw, J.J. *In Conquest Of Illusion*. Wheaton, IL: Quest Books, 2nd paperback edition, 1968. Original edition 1928.

Van Woerkom, A.E. "The Major Hallucinogens And The Central Cytoskeleton: An Association Beyond Coincidence? Towards Subcellular Mechanisms In Schizophrenia". *Medical Hypothesis*. 31, 1990, 7-15.

Wallace, R.K. *The Physiological Effects Of Transcendental Meditation*. Ph.D. dissertation, University of California, Los Angeles: MIU Press, 1973.

Watson, J.D. *The Double Helix*. New York: Atheneum, 1969.

Watts, A. *The Joyous Cosmology*. New York: Vintage Books, 1962.

Watts, A. *Beyond Theology*. New York: Vintage Books, 1973.

Weber, M. *The Theory Of Social And Economic Organization*. Oxford: Oxford University Press, 1947.

White, B., DeGracia, D., Krause, G., Skjaerlund, J., O'Neil, B., Grossman, L.. Brain Nuclear DNA Survives Cardiac Arrest And Reperfusion. *Free Radical Biology And Medicine*. Vol. 10, pp 125-135, 1991.

White, J. editor. *Kundalini Evolution and Enlightenment*. Revised edition. Paragon House, New York, NY, 1990.

Wilber, K. *Spectrum of Consciousness*. Wheaton, IL: TPH, 1977.

Wilber, K. (Ed.). *The Holographic Paradigm And Other Paradoxes*. Boulder, CO: Shambhala, 1982.

Wilber, K. (Ed.). *Quantum Questions*. Colorado: New Science Library, 1984.

Williams, W.S.C. *Nuclear And Particle Physics*. New York: Oxford University Press, 1991.

Wood, E. *The Seven Schools Of Yoga*. Wheaton, IL: Quest, 1976.

Zaehner R.C. *Zen, Drugs & Mysticism*. New York Pantheon Books, 1972.

Zukav, G. *The Dancing Wu Li Masters*. New York: Bantam, 1979.

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In Light of Fractals, Chaos and Quantum Theory**

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- VI-A.** *Figure 1: The Chakras and their Locations Relative To the Central Nervous System.*
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Figure 2: The Petal-like Appearance of the Chakras Along with Three Major Nadi Pathways., (Title: "The Streams Of Vitality, page 16h)

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- VI-B.** *Figure 3: The Structure Of Hydrogen as seen by Besant and Leadbeater, .*
Figure 4: The Structure of the Ultimate Physical Atom (page 13)
Figure 5: Examples of Atoms Clairvoyantly Observed by Besant and Leadbeater,

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VI.-C *Figure 7: Phase-locked Dynamic System Portrayal of Thought-forms Observed by Besant and Leadbeater, (illustrations 45-47).*

Figure 8: Another Phase-lock Portrayal of a Thought-form, (illustration 38).

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VII. *Figure 6. An Aura as a Virtual Cloud, Thought-forms as Virtual Particles, (page 280).*

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VIII. *Plate 11. Meme Bacteria*
Plate 12. Meme Bacteria Blow Up

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